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# THE WONDER OF WAR AT SEA

BY

**FRANCIS ROLT-WHEELER**

Author of "U. S. Service Series," "The Wonder of War in the Air," and "The Wonder of War on Land"

With Thirty-eight Illustrations from War Photographs and Sketches

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The Wonder of War at Sea

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## FOREWORD

The author wishes to point out that the British Navy—which played the largest part in sea warfare during the World War—is known as "The Silent Service." It is extraordinarily reticent and superbly modest. Following its known desires, therefore, the author of this book does not name those whose courtesy has been most helpful in the preparation of this book. Appreciation of British naval and government officials is expressed in the terms of appreciation of the navy. Similarly, gratitude is expressed to American and French naval officers who have been most gracious in affording information and advice.

In the immense literature of the war, it is difficult to name sources which have been the most helpful, but the author desires to mention "The Silent Watchers" by Bennet Copplestone, and "The Sub" by "Taffrail", as books of the highest value and insight. He also wishes to acknowledge the helpfulness of "The Current History Maga-



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zine of the New York Times," as a documentary source-book.

Acknowledgment is made herein of the courtesy of *L'Illustration* and *Je Sais Tout* of Paris, of the *Daily Mail, Illustrated London News, Graphic* and *Sketch* of London, and of the *New York Herald Syndicate* for illustrations taken from their publications, being from photographs or sketches made by their photographers or artists in the field. For the use of official photographs provided by the American and British naval authorities, acknowledgment of courtesy is also made.

# PREFACE

THE sea is a thing apart. The sailor is a race apart. The hero is a soul apart. Sea warfare and sea heroism, therefore, possess a tang and a spirit of their own. The Navy is the incarnation of that spirit.

Naval actions in the World War were fought with huge guns at distances of many miles, but the men were the same as those who responded with a cheer to the old command: "Out cutlasses and board!" Not in any war has there ever been a more desperate hand-to-hand encounter than the Allied attack on Zeebrugge.

Just as trench warfare gave a new character to strife ashore, so the submarine brought new horrors to strife afloat. Just as the atrocities in Belgium revealed a horrid and a callous disregard of human life and human sympathy, so the sinking by torpedoes of unarmed vessels, of liners carrying women and children and of hospital ships displaying the Red Cross witnessed a depravity

alien to the gallantry of men of the sea. The Black Eagles of Prussia became a more hated flag than the Jolly Roger of buccaneers like Morgan or pirates such as Blackbeard and Flint.

The United States has as its first line of defense —the Navy. When America entered the war, it was the Navy which was ready. Long before one American soldier set foot on the soil of France, American vessels were taking their part in European waters. True, all the great naval actions were fought and finished before the entrance of the United States into the conflict, but that does not minimize its glory or its work.

Yet, when all is said, the American Navy is but the sea-incarnated soul of American men on American ships. That soul must be purified by sacrifice and set aflame with noble endeavor. To reveal to the boys of the United States what naval war has become, to sound the call of the ocean into those ears which shall be ready to respond, and to give a deeper mention to their perceptions of the Stars and Stripes tossing over storm-swept or shell-swept waters, is the aim and purpose of

THE AUTHOR.

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# THE WONDER OF WAR AT SEA

## CHAPTER I

### DEATH-SPRINKLED WATERS

THE accusing finger of a searchlight pinned the trawler against the night. Her smoke, wind-whipped to the level of her funnels, and her scuppers pouring as she pitched viciously in the chop of the North Sea, showed that she was making bad weather of it.

Across the black water streaked with spume, a second vessel, a sinister low hull, strung with squat funnels, her fires roaring within her thin steel skin, fared little better. Her nose, buried in water half the time, left a wake of foam across the black-green sea.

"Who are you?" came a megaphone hail.

"The *Puritan*, trawler, of Bangor, Maine."

"Lay to till daylight!" came the order, short and sharp. "We want to have a look at you."

"This is an American ship!" The retort hurtled across the water. "I don't lay to for anything afloat. Who are you?"

"His Majesty's ship *Zulu*. Reduce your speed!"

The skipper hesitated.

A red flash lit up the sea for a fraction of a second, followed by a sharp report.

The warship had fired across the bows of the trawler.

"Must be war!" exclaimed Jabed Wille, the skipper, a questioning note creeping into the resentment in his voice, "else they wouldn't dare."

He turned to the man at the wheel, a grizzled old Yorkshire fisherman.

"What do you think o' that, Simmons?" he said.

"We'd better stop, sir," the man answered.

The skipper glared angrily at the threatening shadow, looming darkly to windward.

"I reckon I'll have to do some lookin' myself!" he muttered, but he rang the telegraph to the engine-room to reduce speed.

A moment or two later, there was a clatter on the iron steps leading up to the wheel-house, the door flew open and a boy dashed in. His oilskins were buttoned all awry, showing the haste

with which he had put them on, and his eyes were still heavy with sleep.

"What is it, Father?" he queried excitedly. "Pirates?"

"They act like 'em," growled the skipper. "No, Jed, it's a British Navy boat, a Destroyer, I reckon, so far as I can see with that blazin' searchlight in my eyes."

"But why did they fire on us? Do they think we're smugglers?"

The captain of the trawler looked down at his son with a slight smile.

"Your head's always runnin' on adventures," he said. "Pirates wouldn't be workin' in the North Sea, an' that boat, yonder, can't think we're smugglin', seein' as we're runnin' with all our lights showin'."

"Didn't they fire on us? I was sure I heard a gun!"

"They fired a shot across our bows and hailed me to heave to!"

"Are you going to?"

"We've only got steerage way on, now," his father asserted.

The boy thumped his fists on the sill of the open wheelhouse window, gleefully.

"This is an adventure," he asserted, "a real, sure-enough adventure. Being fired at by a man-o'-war in the middle of the night! Why, it's like a piece out of a book!"

"It's a piece that'll take some explainin', I reckon," the skipper replied. "I told 'em the *Puritan* was an American craft."

"But why did they fire on us?"

"War scare, I reckon," his father growled. "But you'd better go back to your bunk, Jed. There's no use your hanging around."

"Let me lie down here, Father," the boy pleaded, motioning to the leather-cushioned bench in the wheel-house where the skipper usually slept in bad weather. "If there's going to be any fighting, I'd like to be in on it."

The captain of the trawler smiled indulgently.

"There won't be any fightin'," he answered. "The only arms aboard the *Puritan,* so far as I know, are a couple of revolvers, mine and the mate's. That Destroyer, over there, probably has quick-firers and could blow us out of the water in no time. Do you know what she carries, Simmons?"

"If it's the *Zulu,* sir," came the reply, "I believe she carries two 4-inch guns."

"Just about one of those shells would send us down to Davy Jones' locker," the skipper commented. "No, Jed, there won't be any fightin' at those odds. But if you want to turn in on the bench, there, I don't mind. I reckon I'd have been just as much excited when I was your age. You probably wouldn't go to sleep, below, in any case. I'll waken you if anythin' happens."

So Jed, merely pulling off his sea-boots, flung himself down on the bench, and, in spite of his eagerness to keep awake, was fast asleep in a few moments.

Morning dawned gray and haggard, with that weary look to the sky which tells of a stormy day to come. Day stole, dawnless, over the sea, slowly changing that shadowy silhouette of menace which lay to windward into sinister substantiality, revealing the deadly guns of that hungry wickedness of steel which men have justly called the "Destroyer."

"She looks like the Day o' Judgment," said the skipper, half-turning to the mate, who had come on deck at eight bells to take charge of the watch.

The remark was entirely characteristic of the man, for Jabed Wille, though he had spent nearly

all his life at sea, had not lost the rugged faith of his Pilgrim ancestors. The terms that an ancient prophet might have used, in which his displeasure was wont to explode, were more feared by his men than the profanity of any skipper on the Banks.

At the sound of his father's voice, Jed stirred uneasily and woke. A quick though sleepy glance revealed that it was daylight and the boy twisted himself off the bench.

"Is she there, still?" he queried, grunting as he pulled on the heavy sea-boots.

"She's there, all right," the skipper answered, handing the marine glass to the boy as the latter got to his feet. "You can see her right well with this."

"What are they going to do to us?" asked Jed, nervously, for the warship, lying a scant quarter-mile away and a little astern of them, breathed menace in every line.

"Do to us?" was the reply, "nothin'! The *Puritan's* papers are all ship-shape an' Bristol fashion. If a ship an' a man will keep her papers an' his conscience straight, there's no need to be afeard of anythin' alow or aloft."

"Then why did she stop us?"

"To overhaul our papers, most like. I reckon she'll be signalin'—ah! there are the signals now!"

He looked at the fluttering flags, which had been run up to the Destroyer's masthead, then reached down his long arm for the International Signal Code book at the end of the bench, where Jed had kicked it during his sleep.

"'T A F'" he read on the fluttering flags, which snapped in the stiff breeze. "Let's see—" he thumbed the well-worn pages of the Code—"yes, here it is: 'T A F. Send captain aboard with ship's papers.' That's just about what I expected."

"Will you go?" the boy asked.

"I reckon so," answered the skipper, emphasizing the last word; "I'm not just pinin' for any closer acquaintance with a 4-inch shell. Not," he continued, with lowering eyebrows, "not that she's got any right to stop an American ship. But she's got the drop on us, for one thing, an' the *Puritan* has nothing to hide, for another."

"But a boat? In this sea?" protested Jed, incredulously.

"What about it?" returned the skipper. "You've seen us put out a boat on the Banks

in a sight rougher weather than this, haven't you?"

"Yes—but—" the boy's voice trailed off into silence as he stared at that steel embodiment of threat.

"Not scared, are you?"

Jed met his father's keen gaze, frankly.

"I'm not scared of a boat in any sea, Father, you know that," he answered stoutly, "specially if you're in her. But—but that looks ugly, somehow."

He nodded in the direction of the Destroyer.

"Your ache for adventure seems to be coolin' down a bit," the skipper remarked, as he rummaged among the rolled-up flags in the locker for the three that he needed for an answering signal.

"Not much!" protested Jed. "I kind o' like to feel scared a bit."

The mate laughed aloud.

"That's a plucky answer. He takes after you, sir!"

"There's no yellow streak in the Willes, that I ever heard of," the skipper responded. "I've always taught him not to fear what any man can do to him. An' maybe, some o' that scare he

has will wear off when he sees the boat a bit closer."

"Are you going to take me over there, Father?" asked Jed, eagerly.

"Yes, you're goin' along," the skipper answered. "I reckon they'll be wantin' to know what an American craft is doin' in English waters, if the war really has broken out. You an' I, Jed, are the only Americans aboard. All the crew are your Uncle Amos' men."

He shook out the signal flags, bent them on to the halliards, and ran them out to the truck. Then he turned to the mate, who was waiting for orders.

"Mr. Milham," he said, "have the men put out the starboard boat."

"Aye, aye, sir," answered the mate, and bellowed to the watch on deck.

"As for you, Jed," the skipper continued, "I reckon you're only about half dressed. Go below an' get ready in a hurry."

The boy slid out of the wheel-house with alacrity, meeting his father, on his return, at the bottom of the companion ladder. The skipper had his tin box, containing the ship's papers, under his arm.

"Ready, son? That's right. They're just swingin' out the boat."

It was a ticklish job, with the *Puritan* pitching and rolling in that broken sea, but the men of the crew were fishermen and not merchant sailors, and they handled the boat with that sureness and exactitude which is born of long confidence. Jed jumped into her as she swung out on the davits, and, as the trawler rolled to starboard, the boat shot away clear.

"Clean work," said the skipper approvingly. "Give way!"

The trawler's boat swung round as the long sea-oars bit into the water. The men pulled with that short, powerful British stroke which is so different from the long, loose stroke of the fishers of the Cape Cod fleets. It irked the American skipper, for he was somewhat of a martinet, but he was too wise a man to try to change what was a life-long habit. No man, however, could have criticized the snappiness and skill with which the boat was handled.

A few minutes brought them to the Destroyer's side, and, seizing his chance, Jabed Wille ran the boat in and grasped the ladder, the tin box under his arm. Jed, lithe as a cat, was at his heels.

A young naval lieutenant met them as they stepped on deck.

"The commander wants to see you, Captain," he said. Then, as he saw Jed following, he asked, "Who's the lad?"

"He's my boy," answered the skipper, his nasal drawl contrasting with the naval officer's precise enunciation; "I reckoned, maybe, your commander might want to see him, too."

"Well, Captain, as you think best," came the courteous rejoinder. "Follow me, please."

This was the first time that Jed had set foot on any type of warship, and his eyes were wide with astonishment. The steel decks, the powerful 4-inch quick-firing guns, the 18-inch torpedo tubes, the rows of gaping ventilators gulping air for the furnace-hot boiler-rooms below, the heavy complement of men, and, above all, that sense of tension and discipline which seems built into a warship with every rivet, oppressed him. The men of the Destroyer eyed the lad curiously as he passed aft in the wake of his father and the lieutenant.

In the cabin, the commander, with naval courtesy, received them, standing. He smiled as he saw the boy.

"I am sorry to have had to trouble you, Captain," he said. "Won't you be seated?"

He motioned to two chairs.

"Well, Commander," answered Jabed Wille, as he sank his lanky figure into a chair and crossed one long leg over the other, "I reckon you know what you're doin', but you won't mind my sayin' that stoppin' an American vessel on the high seas an' firin' a shot across her bows is something that needs a bit of explainin'."

"I have received orders to stop and question all vessels," was the reply, "and, in case of suspicion, to search them, as well."

"Orders is orders," replied the skipper. "A man's duty is his inner compass an' he's got to steer by it. But—whose orders?"

"The British Admiralty," stated the commander. "You have your papers with you, of course?"

"Right here," was the reply. "You'll find 'em all shipshape."

The skipper straightened up in his chair, hitched it a little nearer the table and put the tin box in front of him. Leisurely, he then took a bunch of keys from his pocket, selected one and threw open the box. Picking out one bundle, tied with

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"HEAVE TO!"

Gunner's crew on a British patrol boat, having already fired a warning shot across the bows of a suspicious steamer, showing Dutch colors, awaits her instant obedience.

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a piece of netting twine, he loosened the knot and handed the papers to the commander.

The naval officer ran his eye over the papers quickly, then, a second time, more slowly. The while, his fingers tapped the table thoughtfully. Finally he looked up.

"Your papers are in order," he said, "you may proceed. But I think perhaps I ought to warn you, Captain, that you are likely to be subjected to frequent investigation."

"I'm still waitin' to know why I've been interfered with now," remarked the skipper calmly. "It's a pretty risky business, Commander, stirrin' up Uncle Sam. I've shown my papers, accordin' to your request; now, you've got to show your orders, accordin' to my request."

The commander stiffened in his pose.

"You put the matter somewhat abruptly, Captain," he said.

"I reckon it's no more abrupt than a 4-inch shell across my bows in the middle o' the night," the skipper retorted.

The British commander looked thoughtfully at the lanky figure of the Yankee skipper. Then he ran his eye over the *Puritan's* papers a third time.

"I see here," he said, after a pause, "that you left Hartlepool on Sunday. You are, therefore, not aware that war has been declared between England and Germany? That it was declared yesterday, in fact?"

"I didn't know it," answered Jabed Wille, "though I reckoned it was comin', an' comin' quick. A man doesn't have to be much of a prophet, Commander, when he sees a match put to the fuse of a cannon-cracker, to know that there's going to be a 'bang!' pretty soon."

"And by the cannon-cracker, you mean—?"

"I mean Belgium," said the skipper.

"Yes, of course."

"But I don't see, yet, why the invasion o' Belgium gives you any right to stop an American ship. I don't want to do any tall talkin', Commander, you understand, but I propose to see this thing through."

The naval officer drew himself up with an air of affront.

"Now don't go an' get riled," continued the American. "I'm friendly to Britain, right friendly, an' I don't want to mess up with international law an' that sort o' thing. Still I've a right to know why you held me up in the middle

o' the night, an' I'm asking you, man to man."

The British officer answered, in a nettled tone.

"It is not necessary for the commander of a vessel in His Majesty's Navy to explain his actions," he said haughtily.

"Maybe yes, an' maybe no," said the skipper, imperturbably. "I reckon, though, that somebody's goin' to do some explainin' an' it might as well be you. I'm a Yankee, Mr. Commander, an' we Yankees don't take anything, lyin' down. Likely, you're in the right, an' this Belgium business justifies you in stoppin' my ship. I don't pretend to understand these European affairs an' I've a right to an explanation. That's only fair play."

The commander started, as though stung. As Jabed Wille knew well, an Englishman rightly prides himself on his sense of "fair play." It is a part of his creed.

"Very good, Captain Wille," he said, presently, "in a friendly way, and not officially, of course, I'll try to make the matter clear. War has been declared, as I told you, though, from the naval point of view, it is not with regard to Belgium but with regard to France that we are chiefly concerned.

"Without going into details, you probably know that Germany brought about the war by endorsing Austria's intention to punish Servia for the assassination of the Archduke Ferdinand at Serajevo, although, at the time, Germany was well aware that Russia was in process of mobilizing her army to help Servia."

"Yes," the skipper agreed, "I'd figured it out about that way."

"Now," the commander continued, "Russia and France have a close alliance, which is mainly for the purpose of keeping the peace of Europe against Teutonic aggression. It follows, therefore, that if Germany forced the war on Russia, she would also force it on France. She did more. On Friday last, the Kaiser sent a note to the Czar, ordering immediate demobilization, and, on the same day, he demanded from France an assurance of her neutrality and arrogantly asked for guarantees of the same.

"These guarantees, thus demanded, were impossible in themselves, and the request for neutrality was impossible because France could not grant it—even if she wished to do so—without breaking her pledged word, which she would never do. There was but one alternative. On Satur-

day, August 1st, France mobilized her army and her navy."

"Showin' the heathen ragin' furiously together," quoted the skipper. "All this, though, hasn't anything to do with England."

"Now, Captain," the commander continued, "I think you must excuse me if I read you a few sentences from Sir Edward Grey's official speech, as Foreign Secretary, in the House of Commons, which tell exactly why the British Empire is at war with Germany and why British warships investigate all passing vessels. It has become the Navy's duty to safeguard the coasts of France as well as those of England, and, as you very justly said some minutes ago, duty is our inner compass.

"When, on Saturday last, France mobilized her navy in response to Germany's arrogance, the French fleet was in the Mediterranean and the northern and western coasts of France were absolutely undefended. Nearly all the French warships were in the Mediterranean because, as Earl Grey phrased it, the fleet 'has for some years been concentrated there because of the feeling of confidence and friendship which has existed between England and France.

" 'My own feeling,' he said, 'is that if a foreign fleet, engaged in a war which France had not sought, and in which she had not been the aggressor, came down the English Channel and bombarded and battered the undefended coasts of France, we could not stand aside, and see this going on practically within sight of our own eyes, with our arms folded, looking on dispassionately, doing nothing.' "

"He's right, there," commented the skipper, "it wouldn't be a square deal."

"Not only that," explained the commander, "but, supposing France did her utmost and hurried her fleet up from the Mediterranean before the German fleet had time to do a great deal of destruction, it would leave British interests in the Mediterranean in a difficult situation. That is our trade route to India, and the road to the Suez Canal must be kept open."

"But Germany hasn't any fleet in the Mediterranean," objected the skipper.

"Austria has," retorted the commander, tersely. "She has fifteen battleships, a dozen cruisers and a very large flotilla of torpedo-boats and submarines. Moreover, in view of the fact that France was all-powerful in the Mediterranean, we kept

only a small squadron there. Naturally, in this crisis, when France asked England whether she could depend on British support in the event of attack upon her northern and western coasts, we had this practical working agreement to consider."

"I get it," agreed the skipper. "It would weaken France to send ships north and weaken England to send ships south. That worked out so that England just had to get into the thick o' the trouble."

"Exactly. Whereupon, on Sunday afternoon, Earl Grey officially informed the French ambassador that France could count upon England's friendship, in the following words:

" 'I am authorized to give an assurance that if the German fleet comes into the Channel or through the North Sea to undertake hostile operations against the French coasts or shipping, the British fleet will give all the protection in its power.' "

"I still don't see that this gives England the right to interfere with American shippin'," declared the skipper shrewdly.

"No," admitted the commander, "it does not. On Monday, however—that is to say, the day before yesterday—the British government learned

that Germany had invaded the two neutral states of Luxemburg and Belgium, in defiance of all treaties. Accordingly, the British government sent an ultimatum to Germany requesting the withdrawal of German forces from Belgium and demanding an absolute guarantee that Germany would respect Belgian neutrality. This ultimatum was sent yesterday, expiring at midnight. A satisfactory answer was not received and at that time a state of war was declared to exist between Germany and Great Britain."

"That was at midnight, last night?"

"Eleven o'clock, Greenwich time, to be correct."

"At eleven o'clock," said the skipper thoughtfully, "an' four hours later you were on the job, for it had just gone six bells when your searchlight picked us out. Pretty quick work, that!"

The commander permitted himself a slight smile.

"We were ready," he said, "all the more because the Germans sank one of our mine-layers before the actual declaration of war. You see, Captain, the British Navy regards itself as the first line of defense and a defense must always be ready.

"Take your own case. For all I could tell to

the contrary, last night, the *Puritan* might have been a German mine-layer, sowing the sea with death."

"But I told you we were a trawler, an' American at that!" the skipper objected.

The commander leaned forward in his chair in earnest response.

"Suppose you hadn't been? Do you think a German mine-layer, during a time of war, would have told what she was? Certainly not. Her most likely reply would have been that she was under a neutral flag."

"There's reason in that," the skipper admitted. "But, at that, I might be one, still. You haven't searched the *Puritan,* you know. Her hold might be full o' bombs, for all you can tell."

"Captain Wille," said the commander courteously, "you will pardon my saying that I think I know an honest man when I see one. And," he continued, his eyes twinkling, "there's certainly no doubt that you're an American."

"Sticks out all over me, eh?" queried the skipper. "Well, maybe it does. I wouldn't want to be taken for anythin' else, so far as that goes, any more than you'd want to be taken for anythin' but a Britisher."

"Precisely. Now, Captain, I hope I have removed your scruples."

The skipper drew his hand meditatively down his lantern jaws.

"Well, yes," he admitted, "I reckon you have. If I see a fellow tryin' to pick the lock of my door, I've a right to put a gun to his head until he explains what he's doin' there."

"Good. Now, Captain, since I've been so frank with you, perhaps you would have no objection to telling me just what the *Puritan* is doing in the North Sea. Your ship hails from Maine, I see, and, I suppose, has been engaged in the Atlantic fisheries?"

"You hit it," said the skipper. "I've always fished the Banks until a couple of months ago."

"I don't want to seem too inquisitive," pursued the commander, as the American stopped, "but—"

The skipper gave a short laugh.

"But you'd like to know more, eh? Well, Commander, the story is a very simple one. My sister married a Hartlepool man an' came over here to live. He'd been first mate with me for a good many years. Three months ago, Amos, my brother-in-law, got hit in the head with a swinging boom. It's made him silly-like. He can't go

to the fishin' any more. He rented his own boat to some chap he knew an', after the second trip, it was never heard of again. Went down, I reckon, like so many good ships do.

"When I heard that, I knew there was nothin' for me to do but come over here an' pick up the ends of Amos' business as best I could. So I brought the *Puritan* over with an American crew, paid 'em off an' gave 'em their passage money back to the States, then put Amos' old crew aboard the *Puritan.* They hadn't gone on his boat under the new skipper, for they hadn't liked the man.

"It seemed to be his crew that worried Amos most. They'd been with him for years, an' he seems to feel that it's his fault they can't hang together any longer. I tell you, Commander, it was somethin' to see the way those men had stood by their old skipper. Before I got over, they were savin' shillin's here an' there out o' their small pay, to help him along. I couldn't do anythin' else than take 'em aboard the *Puritan,* could I?

"As for me, my wife's been dead for years an' Jed, here, has been with me ever since, afloat an' ashore. So you see, Commander, while the *Puritan* is a Yankee ship with a Yankee skipper, her crew's all English an' she's tradin' an' fishin' to

keep an English home together. There's the story."

"It's a credit to you, too, Captain," responded the commander, "if you'll permit me to say so. But I'm afraid I can't hold out any hopes that you'll be allowed to continue. The Admiralty can't make special rules for special cases, you know. I have not yet received any orders as to what disposition is to be made with neutral ships, but it is only fair to let you know that it is only a question of a week or so, probably, before the North Sea will be closed to all fishing vessels, even those under British registry."

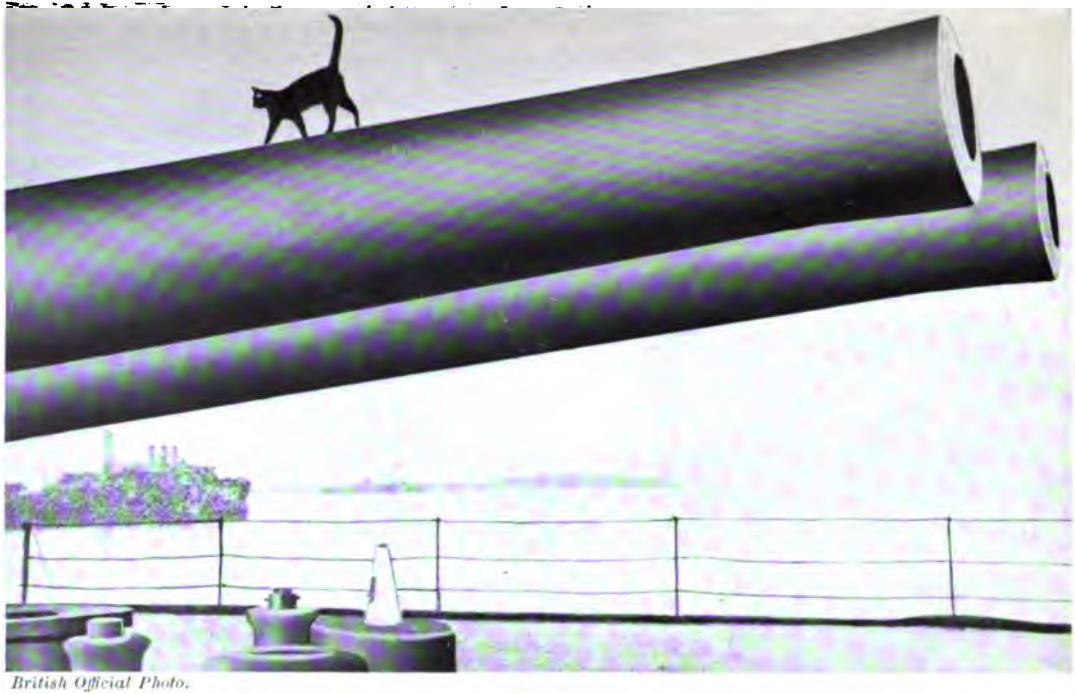
Jabed Wille shifted the quid in his cheek.

"Pretty tough on a man when he's come over to do his brother-in-law a good turn!"

"I'm afraid the war will bring a great many hardships," the naval officer rejoined, "but you will not need to worry about a livelihood, at least. Good ship-captains will be in great demand, and, if the war lasts any length of time, every ship will be sorely needed."

He rose from his chair.

"I wish you good luck, Captain Wille," he said, "and I take it as a happy augury for the future that the first vessel stopped by the British Navy



*British Official Photo.*

**"Are We Down-Hearted? No!"**

**Mascot of the super-Dreadnought *Queen Elizabeth* showing her entire familiarity—not to say contempt—for the great 15-inch guns.**

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in the North Sea, after the declaration of war, should be an American ship, commanded by an American captain, who has come over here to help an English home. That is 'hands across the sea' in the true spirit, without any speechmaking."

He turned to Jed.

"As for you, my boy," he said, "if Captain Wille will allow me to give you a piece of advice? Stick to blue water! If you lay your father's course, you will not be much out of the way when the time comes to prick the chart. You come of a stout breed, for there's no finer body of men in the world than the deep-sea fishermen, whether of the North Sea or the Newfoundland Banks. Do justice to your breed!"

He dropped his voice and exchanged a few confidential sentences with the skipper, as they went up on deck.

Not until he was in the boat again did Jed open his lips. Then, looking back at the warship as he tugged at his oar, he said triumphantly:

"There's not much chance for Germany, with boats like that on her heels!"

"And yet," responded the skipper, as he watched the Destroyer swing away to the southward, "beside a Super-Dreadnought, the *Zulu*

would look as small as the *Puritan* beside an ocean liner."

The expression evidently puzzled the lad, for when they were aboard the trawler again, he turned to his father and asked:

"What's a Super-Dreadnought, Father?"

"If you want to get it exact," the skipper answered, after a moment's pause, "I reckon you'd better ask Simmons. He's got a brother in the Navy, an', besides, he's a shark on all that sort of thing. But I can tell you, in a general sort of way. A Super-Dreadnought Battleship means a vessel heavier an' bigger than the famous *Dreadnought,* but carryin' out the same principle which that ship was built to prove, an' which made her different from all Battleships before that time."

"What was it that was so different?" the boy queried. "It must have been something big, because everybody talks about Dreadnoughts."

"It was somethin' big," the skipper answered. "See here, Jed, the idea is somethin' like this. Before the *Dreadnought* was built, all Battleships were armed with two classes of guns—heavy batteries an' lighter ones. Around 1905, however, the British naval experts figured it out that naval

battles in which big ships are engaged would always be won by the vessels with the heaviest guns, an' before a Battleship could get near enough to her opponent to use her secondary batteries, she would either have sunk her foe or gone down herself."

"That sounds all right," quoth Jed.

"I reckon it is all right," agreed the skipper. "At any rate, the *Dreadnought* started a new scheme o' things in shipbuildin',[1] for all her guns were of the same size, 12-inch, which was the biggest thing made at the time. With all the weight of the secondary batteries taken away, ships of the Dreadnought type could carry as many as ten 12-inch guns an' no other armament except a number of 4-inch guns for defense against sudden torpedo boat attack.

"Super-Dreadnoughts are simply battleships bigger than the old *Dreadnought* but in which the same principle is worked. Most of the new Super-Dreadnoughts of the British navy are armed with 13.5-inch guns which weigh 76 tons an' are over sixty feet long. They can send a shell weighing nearly three-quarters of a ton a distance of ten

[1] American naval experts were working out the same plan at the time, but the *Dreadnought* took the water first and hence became the type ship.

miles hard enough to smash a Cruiser's armor. They're soon goin' to launch a Super-Extra-Dreadnought, I suppose she ought to be called, the *Queen Elizabeth,* with 15-inch guns, throwing a shell weighing nearly a ton. But she, too, will be of the all-big-gun type of ship."

"And suppose a big ship was attacked by a lot of little ones," propounded the lad, "just the way the Spanish Armada was attacked by the English?"

The skipper shook his head.

"I don't know so much about naval fightin'," he said, "but I reckon Battleships don't go into action alone. Seems to me I've heard that a fleet is a sort o' regular organization with so many Battleships, so many Cruisers and a lot of the smaller ships scoutin' ahead."

Jed was eager to pursue his questions further, but the skipper was coming to an end of his knowledge and the boy was bidden be patient until the afternoon watch, for Simmons had gone below.

Little did the lad imagine that, before Simmons should come on deck from his watch below, there was to happen, on board the *Puritan,* that which was to change the current of Jed's life for evermore.

It was a couple of hours after breakfast, just before four bells, in fact, that there came a hail from the look-out on the fo'c'sle head:

"Small boat on the starboard bow, sir!"

The boy, who was on deck at the time, rushed to the starboard rail and looked ahead. The boat was a mere spot on the gray water, but it seemed to the lad that he could make out figures in it.

Who could they be? Shipwrecked sailors?

Climbing up to the wheel-house, Jed found the skipper setting the long telescope to his eye. Satisfied with the focus, he gazed intently for a moment then uttered an expressive:

"By the flukes of Jonah's whale!" which was Jabed Wille's nearest approach to an oath.

"What is it, Father?" asked Jed, eagerly.

"It's a boat, right enough," said the skipper, slowly, "an' it looks to me—" he broke off suddenly.

Then, as though unwilling to admit the truth of what he saw, he handed the telescope to his son.

"Your eyes are younger than mine, Jed," he said, "though I don't know as they are any better. But take a squint through this an' tell me what you see."

The boy, less accustomed to the weight of the

glass and lacking the steady hand and iron arm of the old skipper, tried in vain to focus the glass on the little boat. Between the wavering of his outstretched arm and the pitching and rolling of the ship, he could not bring the boat into the field of vision at all.

"Better rest her on the window-sill," his father advised, noting the sagging arms and strained look of the boy.

So, taking his father's advice, Jed kneeled on the floor of the wheel-house, put the battered brass tube on the sill, and, thus steadied, swung the glass this way and that to try and get the lens to bear on the mysterious boat. At last he found it in the field of the glass, and with a sudden cry, he said, excitedly:

"They're kids!"

"That's what I thought," said the skipper.

But the glass no longer bore on the boat, and it was a minute or two before Jed could find it again.

"They're kids, sure enough," he repeated, "and one of them is waving something. Do you suppose, Father," he continued, excitedly, "they're waving at us?"

"As we're the only vessel in sight," came the

reply, for the Destroyer's smoke was only a wisp on the horizon, "they must be."

"Are you going to pick them up?"

"Seein' that I'm flyin' the Stars an' Stripes an' not the Skull an' Crossbones," the skipper answered caustically, "of course I'm goin' to pick them up. Children, in an open boat, on a rough sea, an' not rescue them? You must be goin' crazy, Jed, to ask."

It was useless for Jed to protest that he had only asked the question to be assured of the exciting rescue, for the skipper rumbled on:

"It's mighty queer, too, how two youngsters come to be in a boat alone! Can't be a shipwreck, for they couldn't have got out a boat alone, unless, maybe—" he paused—"yes, it might be that, maybe there's some one else in the boat, hurt, or lyin' down."

"Maybe dead?" queried Jed.

"Like enough. Or it may be just a pleasure boat blown out to sea. Anyway, we'll run down to wind'ard an' take a look. Then, if there's any one aboard who can pick up a line, maybe we won't have to put our boat out again."

He gave some directions to the helmsman, warning him against coming too close to the boat lest

the backwash should swamp her, and, laying down the telescope, picked up his marine glasses.

"Two youngsters," he asserted anew, as the trawler neared the little boat, "an' not another soul aboard. One of 'em's a girl an' the other a boy. He's wavin' like mad."

The skipper paused thoughtfully.

"There's more than a little somethin' queer in this," he said, "but the sea's the mother o' mysteries, anyhow. We'll know more when we get 'em aboard. But think of it, Jed, out all last night in that open boat, like enough with nothin' to eat! They'll be about half-dead with hunger an' cold.

"Here, son," he continued, "slip lively down to the galley an' tell Cookey to fix up a mess o' soup, hot an' strong. Tell him what it's for. After that, chase down to the cabin an' in the locker above the lazaret hatch you'll find some spare blankets. Get 'em out an' put 'em in your bunk."

The boy was half-way out of the wheel-house door as his father finished speaking, and he started along the slippery decks to the galley at a full run.

Suddenly his feet froze to the deck.

There came a soft thud at the bow!

Followed that heart-choking sensation — most dreaded of all things at sea—that of something scraping along the ship's bottom.

Was it hidden reef or derelict?

A queer, sinking feeling gripped the boy as he felt the decks bulge under him.

Then with a roar and an upburst of water, the world about him resolved itself into one appalling blast.

Flame, steam and débris shot upwards.

Jed felt himself hurled violently into the air. The flash seemed to sear his eyeballs.

For one brief fraction of a second, sea and sky seemed flung together by the concussion of exploding gases.

Then came the emptiness of falling and the paralyzing shock of a plunge into the water.

A gurgling gasp and unconsciousness!

## CHAPTER II

### BLACKER THAN PIRACY

A SALT strangling in the throat, a bursting sensation in the head, and then, with a sudden jolt back to consciousness, Jed found himself at the surface.

Panic glared from his eyes and he clawed at the water, but his sea-boots dragged him down.

Gasping, the boy rose to the surface again and for a few moments he swam furiously, with short stroke and shorter breath, the prelude of collapse. Though a fair swimmer, he had never been thrown, fully clothed, into a heavy sea.

The wind-swept spume struck Jed in the face like a whip-lash and his head was bent back unnaturally to gulp at the air. The blind unreason of utter fear laid hold on him and he was at the point of sinking, when, in his hysterical beating of the water, his outstretched hand struck a piece of floating wreckage.

He clutched it, but the piece of wood gave under

his weight and the suddenness of the submergence sent him under, spluttering. The buoyancy of the wreckage brought him to the surface again.

The mere hold of something solid, however, gave Jed a feeling of confidence, and with a sudden access of caution, he placed only a slight amount of weight on the flotsam, just enough to aid him in getting his head out of the water. A few deep breaths steadied his nerves and he felt ashamed of his fright, a fright, indeed, which had well-nigh cost him his life.

The words of the Destroyer's commander came back to his memory:

" 'You come of a stout breed. Do justice to that breed!' "

To let oneself be drowned merely because of losing presence of mind was not doing justice to that breed, thought Jed. He flushed at the remembrance of his hysterical struggle in the water, not realizing that many strong swimmers have been drowned from the same cause.

The wreckage, which proved to be the door of the cook's galley, torn from its hinges by the force of the explosion, was but a poor support, for being thin and flat, it tilted to one side or the other at the slightest touch. Yet it was some-

thing, and, by carefully using its buoyancy as an aid and not as a dependence, Jed managed to work off his sea-boots. This done, he felt easier, and, for the first time, gave thought to his situation.

He must try to get back to the *Puritan,* somehow, if it were possible for him to swim in so rough a sea. He looked around in keen anxiety, each time that the piece of wreckage rose to the top of a billow.

Where was the *Puritan?*

Surely he could not have been unconscious for so long a time that she had steamed out of sight!

The boy's head being just at the surface of the water gave him little chance to look around him. He tried to climb on the door itself and though, each time he put his weight on one side the other tilted upwards, nevertheless, after several ineffective attempts, he succeeded in laying himself full length on the door and grabbing the sides with either hand. Thus, safe for the moment, he searched the sea in every direction, peering through the spume and spray.

The truth burst on him.

"She's gone down!" he cried.

Again he seemed to feel the soft thud at the

bow, the grating along the keel, the explosion—

Swiftly came another thought and he scanned the water even more anxiously than before.

Where was the boat with the two children?

The gray sea gave no token, there was no sign of the little craft to which the trawler had been speeding at the moment of the explosion. The hungry waters had swallowed all alike.

Had swallowed—

"Father!" cried Jed, suddenly. "Father!"

A sea-gull's hoarse cry was the only answer.

An utter desolation and loneliness gripped the lad and, huddling down on the wreckage, he choked back his tears. His father, the *Puritan,* the children—gone, all gone!

The world seemed very empty; the sea, cruel and hateful.

Viewed at their own level, the waves were not the long rolling billows which they appear from a ship's deck, but were writhing forms creased and jagged with their own urge and strain. Eager for destruction, each wave tore at its neighbor, lacking its wonted prey of ships and human life. The white heads of the seas hissed at him like serpents.

A new terror seized the boy, the terror of the

sea itself, the vast, unconquered sea which tolerates Man's intrusion only to take its deadly toll. The great, green jaws of Ocean seemed opening beneath him.

"Father!" he called. "Father!" It was a cry for help, this time.

Wind and sea mocked at the words and carried them away.

The sense of his own powerlessness swept over the boy, but the words rang still in his ears:

" 'Do justice to your breed!' "

Was he, Jed, going to give in tamely without a fight?

In his chilled veins the blood began to stir, he gripped the sides of the floating door with renewed determination. Hope was not gone, not all gone, yet.

The spirit of resistance arising, Jed realized that he was ravening with hunger. Cautiously relaxing the grip of one hand, he searched in his pockets where remained a few broken pieces of ship's biscuit soaked with salt water. He munched a few soggy mouthfuls, realizing, the while, that his thirst was even greater than his hunger.

Hungry, without food; thirst-tortured, without

water to drink! The seriousness of his situation forced itself upon him. He was alone, clinging to a piece of floating wreckage, on the open sea, without food and water and no ship in sight. Could any plight be more desperate?

Far away, on the horizon, a wisp of smoke told where the Destroyer was steaming, but she was hull down and could have seen nothing of the tragedy. Yet it was something to watch, something which spoke of human-kind, something which quelled the desolation of the sea. As the wreckage bobbed to the top of each wave, Jed fixed his eyes on the distant wisp of smoke, his sole contact with help.

Then, rising on the crest of a distant billow, Jed saw the little boat which had contained the children, and saw, moreover, a third figure in the boat. Who was the third? Was it his father, or some other survivor from the *Puritan?*

Jed lurched up to a kneeling position and shouted with all his might.

The floating door slid from under him and ducked him anew. It took several minutes of combined swimming and scrambling before he managed to balance himself again upon his cranky support.

From time to time, in the lull of the breeze, he shouted anew.

At last came an answering hail.

He had been heard!

Rescue now seemed sure. Jed waited, eagerly, expecting every minute to see the bow of the boat come over the crest of a near-by wave. Long minutes passed and no boat appeared.

Some time elapsed before the boy saw the little craft again, rising on a swell. She was no nearer.

He shouted in desperation, and again came back a shout across the water.

Evidently the boat could not come to him, he must go to the boat. Jed looked at the angry water, and shrank back. Only a powerful swimmer could live in such a sea. He was afraid to risk it and perhaps be drowned within sight of help. No, he dared not leave the wreckage. He must make shift otherwise.

Defying the cold wind, the lad stripped off most of his clothes and slipped into the water, laying both hands lightly on the floating door. Then, swimming with his feet only, he propelled the wreckage inch by inch towards the distant boat.

Exhausted with exposure and lack of food, his strength could not long endure. Half-an-hour's

*Courtesy of "Daily Mail."*

GUARDING THE SEAS BY NIGHT.

British destroyer throwing her searchlight on a suspicious trawler in the North Sea.

*Courtesy of "The War Budget."*

POLICING THE SEAS BY DAY.

**Commander of a British destroyer hailing a fishing vessel which is cruising in forbidden waters and which may be a blockade-runner.**

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exertion wore him out, and he clambered back upon his support. His eyes, smarting with salt, peered across the waste of sea, and soon he was rewarded by a sight of the craft he sought.

There was no doubt of it, the boat was nearer to him.

Greatly cheered, he shouted again, and the answer came to him much more clearly.

After a little rest, Jed slipped into the water again, repeating his former tactics, until, tired out, he took another rest.

The boat was not far off, now.

Yet, try as he would, he could not be sure as to the third figure in the boat.

He shouted once more.

The answering cry was not his father's voice!

With how much less eagerness did Jed take up his final struggle for safety! He realized, as he started to swim anew, that his hope of reaching his father had been an even stronger desire than the mere hope of safety.

He was too tired to swim fast, now, but inch by inch he progressed.

The boat was very near, when, only a few feet away, Jed saw a body floating. Instantly the spirit of rescue rose in the lad, and he struck out

sidewise. Perhaps he could help the drowning man to reach the boat.

The body was floating face upwards.

It was his father!

Gone was the boy's weariness, gone his distress! There was another's life to save! Grabbing his father by the hair, so as to keep his head out of the water, Jed propelled himself forward with strokes as vigorous as though he had not been swimming at all. Yet his efforts were made on his last reserve of nerve strength and when Jed reached the boat and looked upwards, black spots danced in his eyes and it was with difficulty that he recognized the weather-beaten features of the old sailor, Simmons.

"Help!" he gasped.

The sailor, his face distorted with pain, reached over the side of the boat and put his arm around the unconscious skipper. With a last final effort, Jed helped him to lift the limp form into the boat, then sank again himself, his grasp, however, clutching the edge of the floating door.

A grip like iron seized his wrist as he went down, and with a jerk which nearly wrenched his arm from its socket, the boy found himself pulled into the boat, though the light craft rocked

precariously and filled nearly half full of water.

A little eight-year-old boy at the bow bailed furiously. Jed noticed that the bailer was an old boot.

The boat rose over a crest and plunged down into the trough, nearly sending Jed a-sprawl over his father's unconscious figure.

"He isn't dead, is he?" asked the boy, miserably, as Simmons placed his hand on the skipper's chest.

" 'Strewth!' " was the reply, "he's enough like it! He might come to, if so be as we could pump some air into him."

"Artificial respiration?" queried Jed swiftly, for he had been through a course in the boy's Y. M. C. A. in his home town, "I know how!"

"Slap sail on the job quick, then," urged the old salt. "I'd give ye a hand only I can't move. My leg's twisted or broke or somethin'."

With a flash of wonder, Jed realized the agony that Simmons must have suffered when hauling him into the boat, but he wasted no time in talk. His father's life was at stake.

The unconscious man had been stretched across two of the thwarts of the boat, and, straddling the body, the boy began the alternate extension and

flexion of the arms, with regular pressure on the chest, as best he could in so narrow a space. The sailor held the sufferer's head up, and pulled out the tongue so that it should not fall back into the throat and check the first faint impulse of breathing, if, indeed breath should return.

For a few minutes no one spoke. The white face, with its bluish lips, rested impassive. Then came a little flutter of the eyelids, no more.

"He ain't been under long," said Simmons hopefully. "Keep goin', lad, we'll have him on an even keel, yet!"

For two or three minutes longer Jed worked, but his motions grew slower and slower. The arms of the unconscious man seemed to weigh like lead. Agonizing cramps ran through his shoulder and he stopped.

"I—I can't go on," he panted.

"Ain't yellow, are ye?" stormed the sailor.

The word stung Jed. Gritting his teeth, he lifted the seemingly lifeless arms again, one, twice and three times more.

There came a gasp of breath.

"Keep a-heavin'!" cried Simmons. "Don't stop now!"

Dizzily, and almost falling on his prostrate

father, the boy went on. Some inner will drove his muscles, and, in reward, came a deeper sigh.

The heart began to beat.

"He'll do," said Simmons, watching, "but keep on yet."

The poison of exhaustion racked every fiber of Jed's body, but dream-wise he toiled on. A nightmare feeling that he had been working thus for years oppressed him.

Suddenly all went black before his eyes and he pitched headlong, falling directly across the faintly breathing body of his father.

Simmons reached out a hand and shifted the exhausted lad into a more comfortable position, though every movement he took made him wince.

"It's a mercy he didn't go overboard," muttered the sailor; "the way my leg is, I couldn't ha' done nothin' for him."

Then, for the first time since the rescue of the two from the water, Simmons turned his attention to the little lad in the forward thwarts, who had been bailing bravely without a moment's cessation, though the water, there, was shallower than in the stern.

"Courage, Marten!" he said, in Dutch. "Everything's going to be all right."

"Can we go home soon?"

"Surely!" exclaimed the sailor, motioning to the prostrate man. "This is our captain. He'll find a way to get you home."

The tiny girl, crouching in the bow, began to cry softly.

"Don't cry, Mina," said the brother, sturdily, speaking still in Dutch, "we'll be going home soon."

The sailor nodded approvingly.

"There's real pluck in that youngster," he muttered.

He groaned aloud as he tried to move, for his leg had swollen badly, though, in the excitement of the rescue, his courage had overborne his suffering.

"Hand me over the boot, lad," he said, "I'll spell ye at the bailing for a while."

The little Dutch lad, trembling with weariness, passed him the rude bailer and sank on the thwart with fatigue.

"Here, lad," said the sailor, taking off his coat and throwing it to the child, "you'd better put this around you. The wind's a bit sharp and you're all heated up, working."

Gratefully the Dutch lad drew the big pea-coat

around his shoulders, though he put only one arm into the sleeve. The little sister snuggled close to him and the rough coat covered the two. It covered three, indeed, for in all her terror and fatigue, the little maid had never let go of her doll. Not once had she complained that she was cold, but often, through the long night before, when the children were alone in the boat, she had cried that "Greta was cold," transferring all her own distress to the doll she nursed so lovingly. So, with Mina holding Greta in her arms, and Marten holding Mina, the children fell asleep under the welcome shelter of the sailor's rough pea-coat.

The salt spray whipped across the boat, which lurched unevenly up the slope of one wave only to dive staggeringly into the hollow of the next. For a second she would wallow in the trough, as though unwilling to climb again, but, just as it seemed that the oncoming water would fall upon the boat, the little craft would swirl to one side and bow-high would climb the gray slope of water, only to pause again and slide into the next hollow.

Simmons alone, his eyes bright with pain from his injured leg, but red-rimmed from the salt

spray, watched the horizon for help. Presently Jed sat up.

"Feelin' more ship-shape, are ye?" asked Simmons, encouragingly. "That's right. Ye'll need all the grit ye've got."

"How's Father?" asked the boy, anxiously.

"He's comin' along all right," the sailor replied. "He must ha' swallowed quite a bit o' water, though. But he's a stout body of a man, is the skipper, an' he'll be none the worse. See if ye can get a bit of a snooze yourself, Jed, for I'm thinkin' ye're worn out."

"I'm tired," the boy admitted.

"Get into the stern an' turn in," came the advice. "You won't be any wetter there than anywhere else an' ye can stretch your legs out."

"And you?" queried Jed.

"I'm goin' to bail," was the answer. "We'd not stay afloat long without that."

"Let me bail!"

"No," replied the sailor. "You turn in, first. Maybe, later, ye can spell me off."

With staggering steps, for his legs were numb and stiff, Jed stepped over the thwarts and curled himself up in the stern. Water slopped in continually, but in a few minutes, Jed was fast asleep.

How long he slept he never knew, but he awakened, suddenly, at the sound of his father's voice. He opened his eyes and looked out from under the arm which he had thrown over his head to keep the rain and spray from streaming down his neck.

"Father!" he cried, in joy.

"Awake, Jed?"

The skipper came to where the boy was lying in a crouched heap and laid his hand on his son's shoulder.

There are things which are hard to say. Jed understood.

As though he were grown-up, he held out his hand and his father grasped it.

"I reckon," said the old sea-captain huskily, "you won't ever earn anything more worth while than a father's pride in his boy."

Jed flushed, but feeling a boy's natural discomfort in the presence of emotion, he turned the subject.

"What are we going to do, Father?" he asked.

"Get back to shore," replied the skipper cheerfully.

Jed looked around. Somehow the sea did not look so desolate nor the waste of sky so threaten-

ing, now that his father was beside him. Still, visible hope there was none.

"But how?" he asked. "We haven't any oars, or anything!"

"There's a good breeze blowin'," said Jabed Wille.

Jed looked puzzled.

"I don't see how that helps much," he said, disconsolately.

"No?" asked the skipper. "How did ships go before the days of steam?"

Jed jumped at the idea like a flash.

"Sail!" he shouted. Then his face fell. "But we haven't any sails, nor," with an afterthought, "any mast."

"There's a mast!" said the skipper. "A boat-hook came floating by, while you were asleep, and I swam off to get it."

"Went into the sea again, Father," exclaimed the boy, astonished, "and you only just over being drowned!"

"Simmons couldn't go, could he?" was the only reply.

"But the sails?"

"You've got a shirt, so have I, an', I reckon, so has Simmons. We'll make shift with those."

"They won't make much of a sail," said Jed, dubiously.

"You'll see, my son," the captain replied. "We couldn't stand a heavy press of sail, any way, not the way the wind is. If we can get three or four knots an hour out of her, that'll bring us near shore some time to-morrow an' I reckon we can hold out till then. What's more, every hour's sailin' will bring us more an' more in the track o' coastin' ships."

"Well, here's my shirt, as a starter," said the lad, tossing his wet coat on the nearest thwart and peeling off his shirt. "It doesn't look very big, though."

"I reckon we'll make it do. It's fastening the stuff together that's goin' to take some doin'."

"Beg pardon, sir," put in Simmons, who had been listening, "but we've got a needle aboard this craft."

The skipper looked surprised.

"A needle?" he repeated.

The sailor nodded.

"For'ard, in the bow, sir," he said, "you can see that bit of stuff by the lad's foot? There's a needle in it."

"How do you know?" asked Jabed Wille.

A smile passed over the sailor's weather-beaten features.

"When I come aboard," he said, "the little girl was a sewin', doll's-clothes, like."

The skipper puckered his mouth into a wry smile.

"Get it, Jed," he said.

The lad stepped forward and picked up the piece of colored stuff, now dirty and wet.

He handed it to his father, who, meanwhile, had shed his own coat and shirt and was putting his coat on again.

The skipper, still with that wry smile, pulled out the small needle, which seemed smaller than ever in his big brown hand and which seemed strangely out of place in that tossing boat, adrift on that gray and stormy sea.

"Reckon that'd get swallowed in a 'palm,'" he commented, referring to the sailmaker's thimble, a broad band of leather which fits over the whole hand and has a flat thimble in the center of the palm.

Jed was not imaginative, but there was something in the sight of that little needle which caught his breath. The elements were in tumult around them, the wind whipped the spray viciously, the

waves dashed against the sides of the little boat and the air was full of that rushing sound which forms the bourdon of all the noises of the sea. Hunger, thirst, cold and storm beat down upon them, their only weapon a child's needle.

The skipper took a knife from his pocket—as captain, he did not wear the sheath-knife such as that in Simmons' belt—and commenced to rip the seams of his shirt.

A whimper and a child's cry startled him. He looked up.

The little girl was pointing at the piece of colored stuff, her high childish treble babbling in Dutch.

"What's she sayin'?" asked the skipper.

Simmons answered the child soothingly, then turned.

"She says the needle's hers, sir," he answered, translating.

"Sure it's hers," the skipper answered. "Tell her I've only borrowed it."

"I told her," said the sailor, "that you're goin' to use it to help us to get home."

The skipper and the seaman exchanged glances. Well they knew how small a chance there was of their ever seeing home.

"I reckon there's nothin' to eat, Simmons, is there?" he asked, in a low tone.

"There's half a loaf of bread an' a small piece o' sausage, Cap'n," answered the sailor, "I put it in my pocket to give the little uns a bite now an' again. If I let 'em have it now, children-like, they'd eat it all to once."

The captain nodded approval.

"Lucky we had our breakfasts this mornin'," he said, "I reckon that means there's no grub for us."

"An' no water," said the sailor. "One orange, a bit mildewed, that's all."

The skipper looked up from his task of ripping the coarse cotton shirt.

"That's worse," he said.

"Aye," came the laconic reply.

"Do they understand English?" queried Jabed Wille, nodding his head in the direction of the children.

"Not a word."

"Then we'd better tell Jed, eh?"

"As you think, sir!"

The skipper made a slight gesture of distress and turned to the lad.

"Jed, my boy," he said, "you ought to know

*Courtesy of "L'Illustration."*

**The Third Dawn of Agony.**

**The volunteer life-boat of a tiny French island, which set off to sea in a blinding winter storm to rescue the crew of a neutral vessel torpedoed by the Germans. The life-boat was at sea more than forty hours but landed at last with seven corpses aboard, four madmen and the remaining eight survivors exhausted by hunger and cold.**

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what's in front of us. There's hardly any grub on the boat, just a bite or two, an' no water, only an orange. Naturally, that's got to be kept for the kids."

"Of course," agreed Jed.

"It isn't always the strongest that lasts best. It's understood that the last one able to, looks after the little uns."

"Of course," Jed said, again.

"We can't make land before to-morrow, even with the best o' luck, an' without—"

Jed stopped bailing and followed his father's glance as he looked seaward.

"We'll be together, anyhow, Father," he said, and went on bailing.

Working rapidly, but with care, Jabed Wille cut and pieced the shirt together, and then, drawing out one of the threads of the shirt to serve for sewing, he tried to thread the needle. A dozen, yes, a couple of score of times he tried, but in vain, the frayed thread would not go through the eye.

The little girl had watched this operation, round-eyed.

"I can do it!" she shrilled.

Simmons, understanding, took the thread and

needle from the skipper's hand and passed it to Marten, who carefully placed them in his little sister's hand.

The tiny fingers were defter than they seemed. Gravely licking the end of the thread, she passed it through the eye of the needle the very first time. She clapped her hands in delight as she handed the needle back.

Awkwardly, the skipper took the needle and began to sew. He knew well enough how to handle a big three-cornered sail-needle in heavy canvas, but this was a very different kind of sewing and it soon became clear that the sail-making bore little chance of success.

Simmons picked up the fragment of colored stuff from the bottom of the boat, where it had fallen, and examined the stitches carefully.

"If you don't mind my sayin' so, sir," he said, "I think the little un can sew better'n you."

"I reckon that's likely," agreed the other, looking ruefully at his work, "but—" He stopped. "You mean, she might do it, that baby!"

Simmons handed him the little doll's jacket.

"I swan!" declared Jabed Wille, admiringly.

Simmons turned to the children.

"Mina," he said, "will you help us?"

The little girl hid her face in the big pea-coat, shyly.

Jabed Wille, smiling, strode forward to the bow.

"Come, then," he said, in English, and stretched out his hands.

The little face peeped out from the rough sailor's jacket and studied the hard, brown face carefully.

"Go, Mina," said her brother.

With a sudden impulsive movement, the little girl jumped off the high seat at the bow. A lurch of the boat almost threw her on her face, but, just in time, Jabed Wille swung down to catch her, caught her up in his strong arms, stepped back to the middle of the boat and sat her upon his knee.

Then, in that wild waste of waters, a little laugh rang out merrily as the child examined the clumsy stitches of the captain's making.

"I must teach you," she said solemnly, in Dutch, and Simmons translated.

The North Sea has seen many curious sights, but never before did it see a little maiden of seven years old, cuddled on a sea-captain's knee, sewing—literally, for dear life—a sail made from

three shirts. The baby fingers toiled well, until Mina fell asleep, still on the captain's knee, and Simmons took up the task.

The rope which served as the boat's painter was used for a bolt-rope on the edge of the sail and Simmons cut up his leather sheath for cringles at the top of the three-cornered sheet, which was shaped something like a staysail. These cringles were for the purpose of preventing the thin material from tearing with the force of the wind. The captain had cut and doubled the material, so that the two pieces when sewn together were diagonal to each other in texture, thus minimizing the chance of splitting.

The afternoon was wearing away fast before the sail was finished. It was not large, merely an obtuse-angled triangle of frail material, criss-crossed in every direction by lines of irregular stitchings, not more than four feet long on its longest side, and only three feet wide at its greatest width.

"Is that big enough to be any good?" queried Jed.

"Well wetted and well stretched," answered his father, "it'll be all that mast can stand and all this boat can carry. Don't forget, Jed, that

in a full gale, even a big ship can't carry more than her lower topsails, and they're smaller in proportion to the size of the ship than this sail to the size of the boat."

"And will that shirt-stuff hold?"

"That," said the skipper gravely, "we must see. If it doesn't hold, my boy—"

There was no need to finish the sentence.

Meanwhile, being able to work without moving his leg, Simmons had lashed the top cringle of the little sail to the boat-hook and the "mast" was raised, the sail being tightly held around it. The mast was then lashed fast with part of the boat's painter. There was no great difficulty in this task, for the boat was stepped for a small mast.

"Now," said the skipper gravely, "we've got to risk it."

He waited for a lull.

The minutes passed, and the wind blew with undiminished strength, then came a moment's peace.

"If the sail flaps once," warned the skipper, "that will end it!"

Still holding the sail around the mast with one hand, with the other he held out to Jed the piece

of rope fastened to the lower and shorter corner of the sail. Simmons already was holding the sheet of the opposite corner.

"When I give the word," said Jabed Wille, tensely, "stretch this to the side of the boat, quickly, but without jerking."

He paused.

"Haul!"

Like the spreading of a tiny wing, the white gleam of the sail stretched across the boat as Jed and Simmons belayed the sheets to the tholepins.

The mast bent under the strain, small though the sail was, and all the three watched anxiously. But the boat-hook stood the pressure.

Then came the roar of a returning gust and smote the sail.

The boat staggered under the shock and instead of rising to the next wave, plunged through it, half filling with water.

Jed bailed furiously

The mast bent like a reed, but it was of good stout ash, and did not break.

The boat, hitherto an idle thing on the waters, began to move, took a life of its own.

The skipper wiped the sweat from his brow.

Cold though was the late afternoon, the anxiety of that moment had made him a-reek.

"She'll hold," said the skipper, triumph creeping into his voice. "If the wind doesn't rise, she'll hold." Then with his characteristic solemnity, he added, "'Therefore we will not fear though the waters roar and be troubled, though the mountains shake with the swellin' of the same.'"

"And where are we headed for?" asked Jed, after a pause.

"Somewhere on the coast of England," said the skipper. "All we can do is drive before the wind. It's no use tryin' to steer. I'll smash a piece off one of the thwarts an' fasten it to the stern as a permanent rudder, to keep her from yawin' too much."

To do this it was necessary to disturb the children, for, during the last hour and more, Mina had been asleep with her head in her brother's lap. The boy, himself, had been in a state midway between the stupor of exhaustion and the weariness of sleep.

"I'm hungry," wailed Mina.

Simmons took from his pocket the small morsel of bread and meat, cut a tiny scrap from each and gave them to the child.

She ate hungrily, yet not as ravenously as the boy, to whom the sailor gave also a small piece of the bread and sausage.

A segment of the mildewed orange to each of the children finished the meal.

Jed, his lips parched with thirst and his whole frame aching with hunger, fixed his eyes on the sea. He was afraid that he might betray to the children his eagerness for food.

The dark of evening drew down and the little boat labored along, riding more easily and shipping less water since she carried the tiny sail.

"Here's our dinner, I reckon," said the skipper, pulling a plug of tobacco from his pocket and handing it to Simmons.

The sailor looked up gratefully, cut off a chunk and stuck the quid in his cheek.

"No use offerin' it to you, Jed," said his father, "though this is one of the times that a chaw would do you good."

The boy shook his head.

"Guess I'll have to go hungry," he said. "Tobacco makes me sick."

"It's a pity," said the skipper, "in one way, but in another it's a good thing. There's no denyin', though, that it stays hunger. You remember

the old sailor in Westward Ho, Jed, what he said about tobacco:

" 'Ah, sir, no lie, but a blessed truth, as I can tell, who have ere now gone in the strength of this weed three days and nights without eating; and therefore, sir, the Indians always carry it with them in their war-parties: and no wonder, for when all things were made none was made better than this; to be a lone man's companion, a bachelor's friend, a hungry man's food, a sad man's cordial, a wakeful man's sleep and a chilly man's fire, sir; while for stanching of wounds, purging of rheum and stilling of the stomach, there's no herb like unto it under the canopy of heaven.' "

"An' every word o' that's true," agreed Simmons, "but like a good many other good things, it's poison when badly used. To a growin' boy, tobacco's poison."

"Even to smoke?" queried Jed.

"Aye," said the sailor, "even to smoke. Anyway, you couldn't smoke here. The spray would drown your pipe before you'd taken a couple o' whiffs."

"Is the sea rising, do you think?"

"No," answered the skipper, "it's goin' down.

Like enough it'll be rough, but better than last night. Don't forget, Jed, the current is slacker on the English side of the North Sea an' that'll help, too."

"It's tough on the youngsters," put in Jed, looking at the two children fast held by his father's arm, the boy leaning against the skipper's shoulder and the little girl with her head in her brother's lap.

Jabed Wille looked down and smiled at the castaways.

"They'll come out of it better than any of us," he said, "that is, if we make the shore. So long as little uns don't get too much done up, a week o' care sets 'em all right again. They recuperate the way older folks can't."

"How in the world did they get here, do you suppose?" queried the boy.

"I can lay ye the rights o' that," said Simmons.

Jabed Wille looked at him in surprise.

"When did you find out?" he asked.

The sailor winced from the pain in his leg, as he slightly shifted his position to answer.

"Jest as soon as I come aboard this little craft, sir," he said. "It was the little lad, yonder, what picked me up, after the smash."

"How was that?"

"When the old *Puritan* ran her nose against that mine," the sailor began, "I'd just come up on deck from the fo'c'sle to get a straw from one o' the deck-brooms to clean my pipe. It was drawin' most shockin'. I felt the old craft strike, but thought it was a log, like, an' wondered if the propeller 'd clear it. When the explosion come, it threw me clear, for I was leanin' over the rail, thinkin', maybe, I could see what we'd hit. I was blown beam-ways but I jest had sense enough to put my arms up, divin' fashion, before I struck the water. I must ha' hit it like a torpedo, for when I come up again, I wasn't three fathom away from this boat here. Swimmin' jest with my arms an' one leg, I got to her all right an' the lad gave me a hand in."

"How?"

"I told him to pass the end o' the painter from the bow to the stern an' hauled myself in hand over hand. I'd ha' had trouble without. Like enough I'd ha' hung on to the boat till my grip gave out an' then I'd ha' gone down to Davy Jones."

"Where all the rest o' the crew has gone," said the skipper, sadly.

"Aye, sir," agreed the sailor, "looks like we're the only ones left."

He raised his voice a little.

"It ain't no way for a sailorman to go," he declared, "a wreck or a founderin' in bad weather's all nateral enough, an' it's a chance. But mines!"

"About the children?" interpolated the skipper.

"Aye, aye, sir," answered the sailor, breaking from the moment's reverie into which he had fallen, "I was tellin' about the little uns. I'd seen on the stern o' the boat that she was Dutch an' bein' able to talk that lingo a bit, naterally, I asked the lad how he come to be there. An' what he told me, Cap'n, I can't rightly credit. He couldn't ha' made it up, though, an' what's happened to us bears him out. If it's true, it's the dirtiest piece o' business I ever came bows-on to. They're not men, not sailormen, anyway."

He spat over the side, in contempt.

Jed leaned forward, not to lose a word of the story.

"Three days ago—that must ha' been afore the war began—this sailin' boat put out from a Dutch port with a fisherman, father o' these here youngsters an' with their older brother, a lad Jed's size,

maybe, leastways, so far as I could make out. A fog come down thick an' they lost their bearin's. Like enough, the man didn't want to try for shore till it got a bit clear.

"Sudden-like, in the fog, they heard a rattlin' sound, same as an anchor bein' dropped, the lad said, an' the black bow of a steamer loomed up monstrous over the boat, sharp like a knife, heavin' down an' over 'em, makin' like to tread 'em into the water.

"The bigger lad, losin' his head, jumped over the side, an', so far as I can make out, caught a rope which was thrown from the steamer, an' was hauled aboard. What he saw on her decks we can guess, now.

"The father, thinkin' only of his children, belike, grabbed a boat-hook to fend off from the steamer. The on-comin' bow must ha' looked like an iron cliff over their heads, but jest as she was about to strike, the steel point o' the boat-hook touched, an' the man put all his force into a shove. For the littlest bit of a second the point held, an' then, as the boat whirled up an' away from the curlin' wave on the cutwater, the steel slipped on the iron plates, an' the father, who was leanin' forward and pushin' with all his might, overbal-

anced an' fell directly under the steamer. The youngsters never saw him again."

"Sucked under, most likely," said the skipper.

"An' cut to pieces by the propeller," agreed the sailor. "Like enough, sir."

"And the poor kids saw it?" asked Jed.

"Aye, they saw it. The steamer stopped her engines an' a boat put off. It came alongside the boat with the children in, unshipped the mast an' sail, puttin' 'em aboard their own craft, took away all the oars an' gave the children a basket with some broken vittles, a bottle o' water an' some oranges. Like enough, it was just scraps from the officers' mess."

"But why didn't they take the children aboard?" asked Jed, puzzled.

"It wasn't savin' lives they were after, the blackguards," said the sailor grimly. "The lad told me they begged hard to be taken to their brother, but the men in the steamer's boat talked nothin' but German an' either didn't understand Dutch or made believe not to.

"Next they took a long piece o' jute line they'd brought along, took two half-hitches in the bight of it on the painter ring-bolt in the bow o' the children's boat an' went back to the ship, takin'

the two ends o' the rope with 'em. They used jute, belike, so, being light, it wouldn't weigh down the bow o' the boat too much.

"By-'n'-by, so the lad said, he heard the rattlin' again, an' this time, bein' astern o' the steamer, he saw first one an' then a second big iron ball slide down a chute from the steamer's quarter into the sea."

"Mines!" cried the skipper.

Simmons nodded his head.

"Mines, Cap'n, right enough. What come after is only guessin'. But, judgin' from what the lad says about the way the steamer worked, fust on one side an' then on the other, belike she fixed a half-a-dozen or so o' mines on either side o' the two to which the boat was made fast, makin' a mine-field, maybe half a mile long, usin' the boat in the middle like a decoy."[1]

The skipper half sprang from his seat.

"The cowardly brutes!" he exclaimed.

"That way," the sailor continued, "like enough the Germans figured that any ship seein' a boat

[1] Official report of the steam trawler *Shelby Castle*, of Grimsby, England, April 16, 1915. This was but one of many similar mine decoys. It is in contravention of all laws of naval warfare as well as those of common humanity.

adrift with children aboard would run as close alongside as possible, would strike part o' the mine-field, like the *Puritan* did, an' go down. Most like, they were baitin' the trap for somethin' bigger, hopin' to get a man-o'-war, not a bit of a trawler."

"And I suppose," hazarded Jed, "the children were given food and water so that they would stay alive and wave to any passing ship, so as to make a better decoy."

"Aye, that was the idee!"

The skipper shook his fist in the direction of Germany.

"And if the kids were blown up by the mine?" queried Jed.

"Much the Germans 'd care for that!" declared Simmons scornfully. "Like enough they wanted it, for drowned folk tell no tales."

Jed drew a deep breath.

"It's a black story," he said.

The skipper spoke slowly.

"I would have reckoned it impossible, that yarn o' yours," said he, "even though I know there's some men that's got evil in their hearts continually, but you're right in sayin' that the youngsters couldn't have dreamed it, an', besides,

*Courtesy of "Illustrated London News."*

**THE MODERN SEA-MONSTER.**

**Submarine mine cast up near a small fishing village on the coast of Holland. Were one of the spines to be struck, the children would be blown to atoms.**

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there's the poor old *Puritan*. But what I don't understand—"

He paused thoughtfully.

"What, sir?"

"What I don't is how we're cast off now from the mine field. Even if we struck one o' the mines to which the boat was made fast, the explosion can't have broken the rope on the other side. We can't be towing the mines, for we're slippin' through the water at least a couple o' knots an hour."

"I cut the line," explained Simmons, "leastwise, I gave my knife to the little lad to cut it with."

"An' these poor youngsters have been adrift, this way, for three days?"

"Worse'n adrift," said Simmons, "the boat must have pitched somethin' awful, anchored in a heavy sea."

"An' all that," continued the skipper thoughtfully, "must have been done by government order, for there's no fishin' or merchant vessel would have mines aboard."

"Why, as to that, sir, I asked the lad, an' he said the officer in the boat was in uniform an' all the sailors were dressed navy-fashion. There

ain't no manner o' doubt of it, the steamer was a German mine-layer with a naval crew."

"And before war was declared, too!" exclaimed Jed indignantly.

There was a few moments' silence in the little boat, as she ploughed her slow way over the black sea under the press of the tiny sail, and when the skipper spoke again, his voice rang low and deep.

"In the old days o' the Spanish Main," he said, "there was many a black deed done, many a black trick played, an' many a black horror seen, but in all the annals o' the sea, I've never heard of two innocent children bein' used as a decoy to death. That's fouler than the foulest ruffianism, blacker than the blackest piracy."

He fell silent as a grim determination of revenge stole over him, and, in the darkness, Jed heard him, repeating, mutter:

"Blacker than the blackest piracy!"

## CHAPTER III

### HITTING BELOW THE BELT

THE seemingly endless night dragged its slow length along until that final hour when the raw chill that is the courier of the dawn sends its heralding shiver around the world. Even Marten and his little sister then stirred in their sleep, while Jed and his father woke suddenly. Simmons was bolt upright, scanning the gloom for the gleam of some passing vessel's lights, as he had done since midnight, when the skipper had yielded him the watch.

"Must be nigh mornin'," announced Jabed Wille. "How do you feel, Jed?"

"It's c-c-cold," shivered the lad, his teeth chattering. "Doesn't look like morning to me, it's as black as a coal-hole."

"A matter of ten minutes will change all that," said his father, "yes, an' less time, too. Look yonder to the east'ard, son; can't ye see the black is beginnin' to turn gray?"

"So it is!" exclaimed the boy. He watched

for a minute or two, and added, "How fast it spreads!"

For the first time in his life the boy watched the beginning of a day. The black sky of night, heavy with clouds, began to lose its lowering and oppressive weight. As the upstealing edge of gray dissolved veil after veil of darkness, the swart confusion overhead took shape. The clouds showed their piled ranks to be not the confusion of a rout but the precision of an ordered retreat.

Grimly, dourly, resistingly even, the banks of vapor fought their rearguard action against the lightening gray. It needed no great stretch of vision to see the heavy artillery of night and storm rumbling away to the western horizon, to picture marching battalions in the fracto-cumulus overhead, and even scouting parties in the wisps of cloud which lingered behind and were driven forth in broken fleeing lines before the impetuous onslaughts of the dawn.

Before the last of the heavy battalions had merged into the confusion of distance, there rose over the eastern sky that light which never lasts more than one or two minutes at most, that iridescence which made the old poets speak of the morning as the "gates of pearl."

"Isn't that just great!" said Jed, half-whispering. Thus adrift, on the open sea, his senses were quickened to a splendor that would have passed unnoticed amid the familiar surroundings of the deck of the *Puritan.*

Even while he spoke, the gates of pearl burst open and the showy pageant of the morning flung upward in the sky. Lemon-yellow deepening to orange flew up the sky's great arch. Overtaking the gray storm-clouds that had lingered too long, the triumphing dawn seized them and sent them flying onwards, decked with the victor's colors. Yet other lighter clouds, which had floated high above the rack below, as though they scorned acquaintance with baser neighbors, greeted the color equerries gaily and made of themselves triumphal arches to greet the morning.

Then, as though disdaining any further heralding, the edge of the sun's arc rushed above the sea and hung there, sending a red-gold gleam across the water and seeming to calm the billows by its brightness and its cheer. So intent was Jed in watching that he gave a startled jump when Simmons called, as impassively as if he had been on the lookout of the *Puritan:*

"Sails on the starboard bow, sir!"

Jed and the skipper turned simultaneously.

There, to the west, their white sails catching the low rays of the sun, clustered a fleet of fishing vessels, but so far away that each looked like a distant snowflake.

"No chance o' their seein' us yet," said the skipper.

"No, sir," Simmons agreed, "they're all hull down." He stopped, then with a curious sing-song voice, muttered on—"hull down, hull down, hull down, hull down away to Ri—o!"

The skipper looked at him sharply, but Simmons, his eyes fixed on the distant boats, paid no heed.

"But we're getting nearer to them all the time, aren't we?" cried Jed anxiously, his momentary relief at the sight of possible rescue dropping suddenly to the horrid realization that the fishermen might pass them by.

"Our speed doesn't amount to much, Jed," said his father, "it's the course they're takin' that'll settle whether they sight us or not."

"Couldn't we wave a white rag or something? Can't we do anything?"

"It wouldn't be any use, my boy. They couldn't see us."

"And if they don't see us! Are you going to let a chance go by, just like that?"

Jabed Wille looked up angrily, for the turn of the phrase was impertinent, but he remembered the hardship and stress under which the boy was laboring and refrained from harsh rebuke.

"I reckon we can't make 'em see us so long as we're out o' sight," he said half-humorously, "unless you can invent some new kind o' wireless without any apparatus."

"But we must make them see us," said Jed, half-crying, "we must, we must, we must!"

The skipper put a kindly hand on the boy's shoulder.

"What's the matter, my lad?" he asked. "It's not like you to go on in this way."

"I'm so thirsty that my inside skin crackles," blubbered the boy, "and my tongue hurts something awful!"

"It does, eh? Let me take a look at it."

With pain, for his lips were covered with a brownish crust and had cracked in several places, the boy tried to open wider his half-open mouth. To put his tongue out was impossible, it was too much swollen, but in the bright sunshine, the skipper could see clearly the lead-blue tinge which

is the beginning of the horny black tongue of prolonged thirst.

The skipper cast a quick look to see that the two children were still asleep, and then said, softly:

"How many more sections are left in that orange, Simmons?"

The sailor started, as though roused from a dream. He stared around and then, catching his captain's glance, passed his hand across his eyes.

The skipper repeated the question.

Simmons, with a hurried gesture, quite unlike his usual manner, took out the fruit and counted.

"Seven, sir," he answered, rationally enough.

"Seven, eh?" Jabed Wille paused, then continued slowly, "Well, I reckon there's such a thing as turnin' what is meant for kindness into foolishness."

"Meanin' just what, sir?" queried Simmons, frankly puzzled.

"Meanin' that we'd be foolish to let ourselves go mad for thirst, just to make things easier for the children."

"Women an' children first, sir!" protested the old sailor.

"Simmons!"

"Sir?"

"Does that mean women an' children only?"

"It's always done," returned the sailor, with the intense conservatism of the sea.

"I reckon it's often wrongly done," said Jabed Wille thoughtfully. "I've thought about that, more'n once. There's no reason for savin' a silly woman without a thought in her head beyond dancin' an' dressin', at the cost of some man's life that the world can ill spare. Take it right now. Would ye have us lose our lives, maybe, for the sake of yon two children?"

"Three children," corrected Simmons, motioning his head sidewise toward Jed. "Aye, that I would."

"You're wrong, man," said the skipper, "you're wrong. Hand me that orange."

"Beggin' your pardon, sir," retorted the sailor, with the rigid etiquette of the sea, "an' may I be so bold as to ask what for?"

"To give a piece to each o' the three of us, leavin' four pieces for the children, which will serve them for twice."

"I'll not do it," said the sailor.

"Who's in command here?" The question cracked like a pistol shot.

The old English fisherman looked back sturdily at his captain.

"If so be as this is mutiny, sir," he said respectfully, "I'm willin' to stand my trial ashore an' go in irons till we get there, as is only right. But I makes free to disobey your orders, Cap'n Wille. Like enough, my idees is old-fashioned an' unseaworthy; I ain't noways eddicated like you. But I see my compass bearin's true in this here business an' it says 'women an' children first'!"

Anger and respect struggled in the skipper's face, but he was not a man to be thwarted.

He stepped to where Simmons was sitting.

"As a mutineer dangerous to the peace o' this craft," he said quietly, "I've a right to search you an' take everything you have, meanwhile tossing you overboard if you resist. You know that?"

"Aye, I know it," answered the sailor undauntedly.

The next movement was so swift that Jed could hardly follow it. The skipper had gripped the sailor's throat with one hand while with the other he snatched the orange from the Englishman's pocket.

The grip had been of but a second's duration,

After the First Bomb, Sinking by the Stern.

**The Explosion of the Second Bomb, at the Bow.**

*Courtesy of "L'Illustration."*

**The End of the *Nantes*, Sunk by the German Commerce Raider *Moewe*.**

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but Simmons choked and gasped as the captain stepped back with the fruit. He recovered himself with a torrent of words.

"Usin' abusive language to your superior officer," said the captain, when the sailor stopped for lack of breath, "is a serious offense. But I've heard nothin', mark ye, Simmons, nothin'."

During this scene, Jed's wits had been in a turmoil. When his father was speaking he agreed with his father, when Simmons spoke, his sympathy was there. Therein he differed little from most men, for the problem of priority in saving life is one of the undetermined questions of the sea.

It came as a direct issue to him, however, when the skipper carefully broke away one of the segments of the orange and cutting it at the top with his knife, motioned to the lad to put back his head that the orange juice might fall on his parched tongue drop by drop.

"I don't like to, Father!" he began, when he caught the look in the skipper's eye. Bucko mates of bruiser fame had quailed before that glance, and Jed gave in.

Though the acid bit his tongue, the refreshment of something liquid which was free from salt sent

a quick thrill all through his craving body. He moistened the roof of his mouth with his tongue and felt better.

"You'll take half now an' half in a few minutes," said the skipper, and treated himself in like fashion. Then he broke off a third section and laid it on the thwart beside Simmons.

"That's yours," he said.

The sailor cast him a scornful glance and put it in his pocket.

The sun had now cleared the horizon and the sails of the fishing fleet were crossing off to the northward. All three had watched them without a word said, for it was becoming certain that their course would take them far away before the little boat could come in sight.

It was at this point that Mina woke.

"Greta's hungry!" she wailed.

The cry roused Marten, who yawned prodigiously and rubbed his sleepy eyes, making them smart sharply from rubbing in the salt which had encrusted on his eyelids.

"Aren't we going home?" he asked disappointedly, as his gaze fell on the unbroken expanse of sea.

"Right you are we're goin' home," said the

sailor cheerfully. "See how the sun's come out to show us the way."

"Greta's hungry!" repeated the little girl, in the same pitiful wail.

"Better give 'em their breakfast, Simmons," said the skipper, "seein' that you seem to be steward this trip."

"Aye, aye, sir," returned the sailor, formally, but he succeeded in putting a vast amount of resentment into the commonplace answer.

It was a meager breakfast, hardly more than a mouthful of sausage for each of the children and only one slice of bread apiece, but, even so, it consumed a full half of the remaining supply of food.

"Is that all there is for dinner?" asked Marten, pointing to the scanty remnant.

"Aye, there's not much for dinner," came the reluctant admission, "but we're all goin' to have a rip-roarin' supper, most like."

"At home?"

"Well, maybe, not just at home, but some place nigh as good," declared the old sailorman, cheerfully.

"I want to go home!" cried Mina. "I'm so thirsty!"

Simmons, fixing his eye on the captain defiantly, took from his pocket the section of orange which he had refused for himself and gave it as a double portion to the little girl. After which he broke out immediately into an inordinate and noisy fit of laughter which sank into mutterings about "white-livered Yankee skippers" and the like, to which Jabed Wille paid no attention.

Jed, afraid of a resumption of the quarrel between the two men, turned the subject.

"Are we going to run close to that fishing fleet, Father?" he asked, his self-control returning.

A look of distress came into the skipper's eyes.

"I reckon not," he said, "we can't alter our course to meet 'em. We'd capsize, Jed, if we tried to beat up to the nor'ard; the boat's not built for it. The way we're rigged, we can only run before the wind."

"How far are we from shore, Father?

"Twenty or twenty-five miles, maybe."

"And we're only making two knots an hour?"

"Hardly that, now."

"We can't get in before evening, then?"

"Not unless the breeze freshens."

"Which it won't," interrupted Simmons, bitterly, glaring at the skipper. "It'll shift north

an' blow us clear to Davy Jones, because he—" pointing to the skipper, "he ain't a man. He's a Jonah, he's a—" He broke off suddenly into an old sea chanty: " 'A-roamin', a-roamin', I'll go no more a-a-ro-oamin'—' "

Jed had seen that glare, and a shiver of fright went through him. A gleam which was more than fever shone in the sailor's eyes and there was a slight froth on his lips.

Jabed Wille spoke softly, his lips scarcely moving.

"Get his knife, Jed," he said, "the best way you can."

What the lad had feared was true, then!

He gulped hard.

For a few minutes there was silence, broken only by the suppressed sobbing of the little girl, as her brother tried to comfort her. Meanwhile, Jed was racking his brains for some excuse that he might give to Simmons which would sound reasonable and not awake suspicion. Presently his expression cleared.

"If I go without grub much longer," he said, with a forced laugh which he tried to make as unconcerned as possible, "my clothes will fall off in a heap. I've taken in the very last hole of my

belt. Lend me your knife a minute, Simmons, I've got to make another hole."

The sailor handed him the knife, suspecting nothing in the request.

Jed took it, unbuckled his belt and made a further hole, wondering what was the next thing he ought to do, when, just as he was finishing, his father's strong hand closed over his and took the knife from him.

"That's my knife!" cried Simmons thickly, in sudden passion. He tried to get up, but the jar to his wrenched leg brought him back to his seat with a groan.

"Disarmin' mutineers is a cap'n's first duty," said the skipper, shortly.

Simmons made no immediate reply, but with delirious inconsequence, he tried to grab the bailer from the boy's hand.

"Gimme my boot!" he mouthed. "I'm a-goin' ashore."

Jed snatched it away and the sailor laughed. There was a wild, eerie cadence to the laugh, and, in the warm August sunlight, Jed shivered. He looked up at his father, alarmedly.

"Mad!" said the skipper, nodding reply. "He's gone clean mad! I've seen it comin' on,

some time back. Lack o' water 'll send a man ravin' as quick as anything I know."

"What'll he do?" whispered the boy.

"Do?" came the response, "he can't do anything! With that leg o' his, he can't throw himself overboard, that's one good thing. An', for another, I've got his knife, so he can't do anybody else any harm."

"And might we—?" he could not finish the sentence.

"Go like him?" queried the skipper. "No. That's what I was tryin' to save him from. Obstinate old shell-back! That bit of orange might just have tided him over. Anyway, I reckon that he's always been a hard drinker, an' it always catches that sort first. We can hold out for to-day, anyhow."

The skipper spoke hopefully, but he had read the sky and knew that Simmons' prophecy of a shift of wind was a true one. Presently, in little choppy puffs, came the expected veer, and the rising sun, which had been directly astern, appeared on their port side.

Jed's pale cheeks whitened.

"We're headed south, now, aren't we?" he asked anxiously.

The skipper nodded.

The boy needed no one to tell him that there was no land near, in that direction. He passed his hand over his cracked lips with a little groan.

Simmons, who had been swaying backwards and forwards, droning first one sea-chanty and then another, now leaned over the side and filled the palm of his hand with salt water. He was stooping down to drink it when the skipper with a quick stride forward dealt him a ringing open-handed slap in the face. The blow sobered the sailor for a moment, but he soon tried to repeat the fatal draught.

"I won't let him kill himself, not if I can help it," said the skipper. "Give me your belt, Jed!"

He snatched Simmons' hands behind his back, no difficult task, for the sailor was too crippled to struggle, and tied them firmly.

"How would salt water kill him, Father?" asked Jed, who had watched this wide-eyed.

"As long as you're only thirsty," the skipper explained, "you'll come around all right when you get water. Thirst is worse, of course, like with us now, when our lips are salty an' we can't help tastin' it, because that aggravates the thirst. But

if you drink sea water an' the salt gets into the stomach an' all, it sets up a ragin' fever inside which scuttles a man's brain an' he either dies or goes incurably insane."

He was proceeding to tell some stories of shipwreck, when the little Dutch lad yelled excitedly, and pointed to the horizon.

"What is it, lad?" asked the skipper, forgetting that the boy knew no English. He followed the pointing finger.

"Eh, what? A steamer? That looks like smoke, sure enough! Here, Jed, look!"

Jed was already looking with all his might.

"There's three or four! There's half a dozen of them!" he cried.

"An' heavy smoke, too," declared the skipper, shrewdly, "seein' they're so far off."

"Suppose they're comin' this way?"

"We'll soon know!"

For the space of several minutes no one spoke. All watched the distant smoke and the skipper's face, alternately. Slowly the expression of anxiety gave way to hope, and hope to relief.

"I reckon they are!" he said, at last, slowly.

Jed commenced a broken cheer, but his father stopped him.

"Reduce speed on your celebratin'," he said warningly, "we're not aboard them, yet!"

"But we're going to be," declared Jed, confidently, "I just know it!"

Joy rang in his tones and little Mina, hearing, laughed happily. Yet the black shadow of disaster returned to hang over them as the croaking song arose:

"In Bristol Town where I did dwell, Haul, my bully boys, haul!—"

The foul old sea-chanty sounded sinister against the sunlit morning.

The waves were subsiding now and the wind had fallen to a light breeze which moved the boat along but slowly under so small a press of sail. None the less, the far-away smoke steadily grew clearer and clearer and the distant hulls showed as gray specks against the sky-line.

"They might be navy boats," hazarded the skipper.

"Oh!" cried Jed, excitedly, "regular men-o'-war?"

"Might be."

"But suppose they're German ships instead of British?"

Jabed Wille shook his head.

"Not likely," he answered, "they're steaming to the east'ard, an' besides, no German fleet would risk bein' as near British shores as this. An', even if they are," he added, "they'll have food an' water aboard."

"But they mightn't pick us up!"

"No sailorman afloat would run by," declared the skipper.

"But the children—" began Jed.

Jabed Wille's face clouded.

"I was forgettin' about the children," he said, vengefully. Then, in an easier voice, he added, "at that, it's a ten to one shot that they're English."

Another half-hour's sailing solved all question as to whether the little boat would be sighted. The warship flotilla was evidently steaming directly for them.

"Reckon they've seen us long ago," commented the skipper, "after all, they've got lookouts in the foretops, most like, an' they've got glasses aboard."

In spite of his agony of thirst and his parched lips, Jed jumped eagerly.

"Then it's sure?"

"It's enough sure to give the youngsters the

rest o' the grub," came the reply. "There's no use in keepin' it until we can get all we want. Take the stuff out of Simmons' pocket, son."

Jed had suffered some hard things during his boyhood at sea, but to keep from carrying that fragment of sausage to his lips was one of the bitterest fights with himself that he had ever known.

"Four pieces of orange left, eh?" said Jabed Wille, aloud, when he had divided the remaining food between the two children, regretting, as he did so, his ignorance of a single word of Dutch. "Well, I reckon that's a piece for each o' the youngsters, one piece between the two of us an' the last one for Simmons."

"Will he take it?"

"I reckon," said the skipper, "with a little gentle urgin', he might."

"Oh, by force?" the boy queried, "I see."

The sailor, now utterly deranged, made no objection, but gulped down the few drops of juice, as well as his swollen tongue and inflamed throat would allow.

"A Cruiser an' four Destroyers, I reckon," said the skipper, turning to watch the oncoming flotilla, when the elaborate meal had been finished. "I'm

goin' to unship the mast an' use the sail for a distress flag in a few minutes. See if you can undo the lashin's, Jed, we don't want to cut anything, lest something should happen."

"I'm not worrying," said Jed, and, pointing to the ships, he expressed in pantomime to the children that rescue was coming soon.

On came the flotilla, one of the Destroyers displaying signals in answer to the Cruiser, which was evidently the flagship.

"Not havin' a glass, I can't see the flags," said the skipper, "but I reckon it's sure an' certain that she's got orders to pick us up."

It looked like it, for the Destroyer, diverting her course a trifle, came steaming straight for the little boat, while Jabed Wille, bracing himself with one foot on each side of the boat, waved the shirt "canvas," no longer needed as a sail.

The warship was near now, and the skipper, dropping the sail, proceeded to go through a series of evolutions with his arms, which looked as if he were demented.

"What's all that for?" asked Jed.

"I'm just talkin' to 'em," said the skipper, continuing to gesture, and spelling out the letters for the boy's information.

"H-E-L-P S-T-A-R-V-I-N-G," the letters ran.

A bluejacket on the Destroyer answered with signal flags so fast that his arms seemed to stutter.

"They're putting off a boat," said the skipper, translating the jerky movements, "yes, here she comes!"

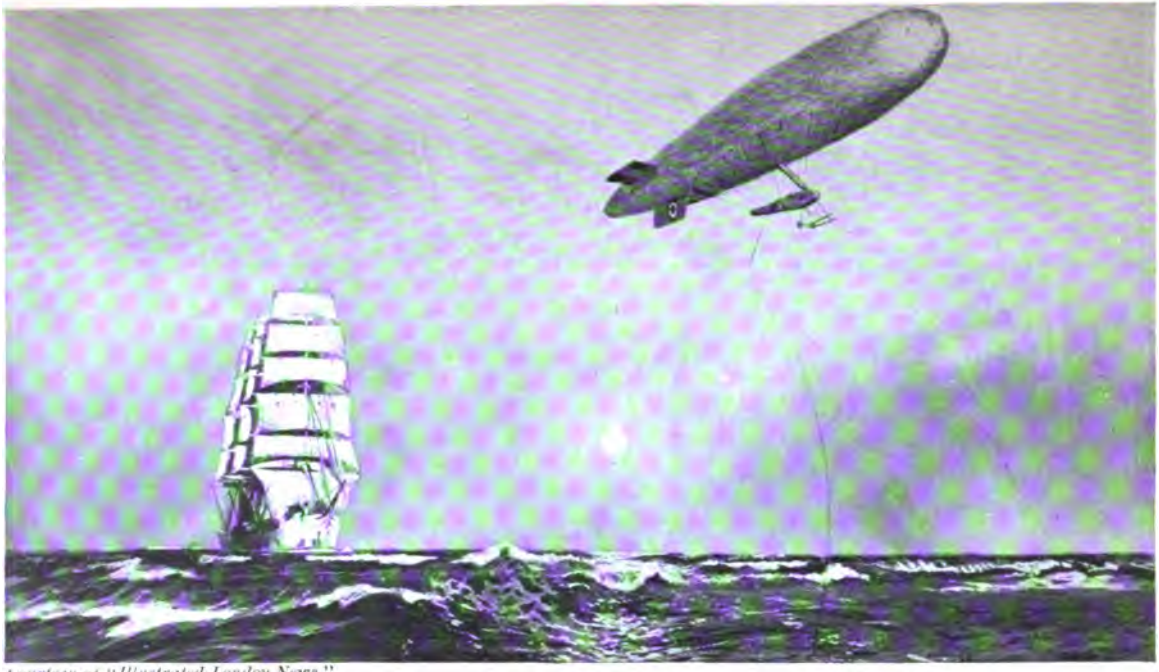
As he spoke, a boat shot away from the warship, and, rowing man-o'-war's-men's stroke, came over the now smooth water with the speed of a motor launch. It ran smartly alongside them.

"Who are you?" queried the officer in the stern, a young naval lieutenant. "What's the trouble?"

"Master of the trawler *Puritan,*" answered the skipper, "four days out of Lowestoft. We struck a mine yesterday and went down with all hands but three. These children were in this boat, adrift. I'll tell you their story, later."

"All right, Captain," answered the young lieutenant. "Let's have the youngsters first."

Mina and her brother were quickly grasped by the strong arms of the bluejackets, the little girl hugging her doll tightly and evidently being more concerned for "Greta's" safety than for her own. In response to a couple of explanatory sentences, then, two of the sailors jumped into the Dutch boat, picked up Simmons as gently as possible



*Courtesy of "Illustrated London News."*

**WINDJAMMER AND DIRIGIBLE, THE OLD STYLE AND THE NEW.**

**Old time full-rigged ship, under full sail, carrying a cargo of grain, being convoyed to an examination station by a dirigible. These stations were constantly changed and the directing convoys—which might be either air-scouts or sea-scouts—met all incoming ships. Even during the midst of German submarine activities, six ships an hour entered British waters.**

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and passed him to their comrades. The madman raved angrily, but was helpless with his wounded leg and his hands still tied. Jed followed and the skipper came last.

"Give way!" came the order.

The whaler, the sharp-sterned boat carried by Destroyers, as contrasted with the smaller dinghy of the Torpedo-Boat and the larger gig of a Cruiser, shot back swiftly under its fourteen oars to the waiting warship.

"How about the children's boat?" asked the skipper.

"We'll send word to one of the colliers to pick it up," answered the young officer.

Jed looked puzzled.

"By wireless," his father explained.

Smart seamanship put the survivors on board the Destroyer in a couple of minutes and they were hurried off to "sick bay" or the ship's hospital, all save Jabed Wille, who, wiry old Yankee that he was, disclaimed all need of treatment other than a good meal.

A small amount of broth, a smaller quantity of food, and dry blankets, were all Jed needed, and though it was now almost the middle of the morning, he fell fast asleep.

Shortly after noon the boy awoke refreshed and eager to get up. His lips were sore and his mouth and throat felt thick and coated, but his eagerness to make closer acquaintance with the Destroyer was greater than his discomfort. When he started to climb out of the bunk, however, the orderly promptly stopped him.

"Doctor's orders!" was the bluejacket's only response to Jed's indignant questions. "You doss there till you're told contrairy."

"But I want to get up right now!" protested Jed.

His attendant grinned amiably.

"In 'Is Majesty's Nivy," he said, "orders is orders. You'd oughter thank yer lucky for the chance to st'y below."

A further protest showed Jed the uselessness of pleading, and, being on board a naval vessel for the second time in his life, he flung question after question at his stalwart nurse. Especially he wanted to learn all about mines, but when he came to details, the bluejacket scratched his head.

"You'll 'ave to tackle the Chief Gunner's Mate," he said, "or the lootenant 'oo picked you up. 'E's bin in a'ready twice to see 'ow you was a-gettin' on."

"If he comes in again, that's just what I'll do," said Jed, with determination. "When a chap's been blown sky-high, he wants to know what hit him."

"It might 'ave bin a bloomin' torpedo," suggested the orderly.

"No," the boy answered, "I'm sure it wasn't," and he told what the Dutch children had seen.

The sailor laughed with anticipation.

"Right-o!" he said, with frank delight. "Them 'ere Germans 'ave been spoilin' for a lickin'. They're 'eadin' the right way to get it, too. What are we goin' to do? We're goin' to bloomin' well swob 'em up."

Whereupon the Jack-tar proceeded to declare the typical English contempt for anything upon the seas which was not under the British flag. He stopped in the middle of a sentence, however, and sprang to the salute as the young lieutenant came in.

"Well, lad," he said, "how are you feeling?"

"Fine, sir!" declared Jed, "only I want to get up."

"That's for the doctor to say," the lieutenant replied. "You must be jolly well done up, though."

"I feel all right now," the boy replied. "It was your coming that saved us, sir. We couldn't have held out much longer."

"Tell me, in your own way, just what happened," said the young officer. "Captain Wille has already told us his story, but I would like to have your own impressions. I want to know, too, how you managed to save your father. Begin from the very beginning."

So Jed, partly aided by questioning from the officer, told the story in detail, enlarging, as he did so, on the mystery of the mine.

"Would you mind, sir," he asked, when he had finished, "if I asked you a question?"

"Not in the least," the lieutenant answered. "What is it?"

"It's just about those submarine mines, sir. Father didn't seem to know much about them, nor did Simmons, one of our sailors. What are mines? What do they look like? How do they work? Are they perfectly all right things to use in war? Father didn't seem to think so. He was awful mad when he heard about the children."

"That was a—a—despicable affair," the young officer replied, changing the adjective at the last moment. "But, see here," he added, "you said

you were going to ask one question, not half a dozen! As to whether submarine mines are legitimate or not, that's jolly hard to answer, without going into a lot of detail. There's a bally lot to international law, you know."

Jed didn't know, but he had no intention of letting go his opportunity. Also he had the American boy's disregard of official position and so he asked, bluntly:

"If you got chucked up into the air suddenly, you'd want to know what did it, wouldn't you?"

"Would I just!" the young officer agreed.

"Well," said Jed, feeling a companionship with the lieutenant because of the slangy reply, "you might tell a fellow what a mine is. I mean, exactly."

"A submarine mine," the officer answered, smiling slightly as he saw that it would be discourteous not to answer the question, "is a metal ball or cylinder containing a high explosive, which goes off when near or under a vessel and generally sinks it."

"Does it go off of itself?"

"That depends. Some do and some don't. Well, I suppose I'll have to explain the game a bit. You know, there are three different types

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of submarine mines, first, those which are laid across the entrances of harbors or channels and which are operated by an electric battery on shore; second, those which are laid in the path of shipping, anywhere, and which are exploded by concussion or by heeling over too far when lightly touched by a passing vessel; and third, floating mines, of which there are a dozen different kinds.

"Nearly all important harbors are protected by mine fields of the first type, that is to say, mines which are below the surface of the water at a depth deeper than the draught of passing vessels, and which are inert or harmless as long as the current of electricity in the controlling station is switched off.

"Suppose, for example, there's a field of controlled mines in the channel leading to the harbor at Hartlepool. That would mean, you know, that about thirty feet below the surface, or perhaps a little more, mines—generally in groups of four—would be connected by insulated cables to an observation post on shore. This observation post is often a cave dug in a hillside, or something quite inconspicuous, with only a small hole through which the observer can watch out to sea. It is, therefore, absolutely invisible from the deck of

an enemy warship or from a scouting aeroplane.

"The observer has a chart in front of him, showing the exact position of the mines and he has a range finder which shows him the exact distance of the approaching enemy. When his range-finder shows that the ship is over any portion of the mine field, he touches a button which closes an electric circuit running to the battery or dynamo ashore, the current speeds along the cable to the mine, ignites the explosive and, nine chances out of ten, the ship goes down. These controlled mines are generally bigger than the other kind, as, not being right up against the vessel's bottom, there is a cushion of water between them and the ship."

"That seems fair enough," said Jed, "after all, I don't see much difference between firing a mine in a harbor and firing a gun from a fort in the harbor."

"There isn't any difference," said the young naval officer, "and controlled mines are a recognized part of the harbor defenses of every nation. It's a bit off, though, in uncontrolled or mechanical mines, which go up when anything hits them. A mechanical mine hasn't any brains. It's like putting an idiot at the guns of a fort to fire on every ship he sees. He'd be just as apt to hit a peace-

ful merchant ship as a war-vessel, or one of his own craft instead of the enemy's."

"Only," put in Jed, "the enemy would know where he had laid his mines."

"The ship that laid them would," replied the naval officer, "but ships of other fleets or merchant vessels under the same flag mightn't. But that's not the worst of it. If an enemy ship hits a mechanical or uncontrolled mine, it's a part of the fortunes of war; if one of your own ships does it, that's your penalty for not having notified every vessel you have afloat; but if a neutral vessel strikes it, as the *Puritan* did, then there's no excuse. The mine which your trawler struck yesterday, was laid in defiance of the rules of naval warfare, for Captain Wille told us the children had said it had been laid three days before, and the laws of war require that a mechanical mine become inert after twenty-four hours."[1]

"But how can they be made harmless?"

"That's easy," the other explained. "A small valve is opened, which lets the water in, drop by drop, at the end of 24 hours—or less, according to the way the valve is set—the added weight of

[1] Articles of The Hague Convention, 1907, Articles 1 and 2, with subsequent emendations. These articles were signed by Germany.

water wets the dry primer, thus preventing it from exploding, and presently fills and sinks the bomb."[1]

"What does a mine look like?"

"Most of them look like round iron globes, about two feet and a half across. The German and French types are 31½ inches in diameter and ours are 3 inches bigger. They have horns projecting at the top, the German mines generally having four horns, and ours five."

"Horns?"

"Yes, or spines, if you like. These project two or three inches, and are made of a very soft metal, lead, generally. Inside the soft lead spines are delicate glass tubes containing an acid which pours down upon the electrodes of an electric battery beneath, instantaneously generating a current which ignites the explosive.[2] The current passes through a soft-iron or platinum wire of high resistance, which immediately becomes white-hot,

[1] It is notable that in many mechanical submarine mines of German manufacture, this humane device is not only not opened, but not even constructed in the mine at all. This is a flagrant violation of international usage.

[2] Most mines of this pattern were developed a little later in the war than the time at which the naval officer is speaking. They are described at this point to make comparison of the various types more clear.

setting off—in the most effective type of mines—a charge of fulminate of mercury. This, in its turn, detonates two or three hundred pounds of trinitrotoluol or TNT, as we call it, the most powerful explosive in use. The advantage of TNT is that it bursts the mine in pieces, driving fragments of iron through the hull of the doomed ship like jagged pieces of shell and thereby increases the likelihood of the vessel's sinking."

"Do you suppose it was one of those which sunk the *Puritan,* sir?" queried Jed.

"The chances are that it was, or it may have been one of the older forms of mine, with a wet gun-cotton explosive. In such mines, the spines are more like movable knobs, or plungers, and when a ship hits the mine and the steel globe rumbles along the bottom, turning because of the friction, one of these plungers is pressed in, closing an electric circuit to an active battery. These mines have 500 pounds of wet gun-cotton in round flat cakes with a hole in the middle, something like doughnuts. There is a central tube, as in the newer pattern, which is packed with dry gun-cotton and is also ignited by fulminate of mercury."

"It must have been that kind," said the boy, excitedly, "for I felt it rumble along the bottom,

*Courtesy of "The Graphic."*

**"All's Well! Mines Swept Clear!"**

**Captain of a mine-sweeper signaling to the destroyer advance-guard that the Grand Fleet may pass in safety.** ***(Camera study by F. J. Mortimer.)***

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myself. But, sir, are mines always anchored? I thought they floated along the top of the water, sometimes."

"Rot," answered the officer shortly, "what would be the good of that? In daytime a ship would see them, and at night, searchlights could pick them off. Then they could be avoided, and a well-placed shot would send them to the bottom without doing anybody any harm. There are floating mines, of course, but they never float on the surface of the water.

"I don't quite see that," said Jed, puzzled. "If a thing floats, it floats, doesn't it?"

"Right! But not on the surface. Lots of kinds of mines have been invented which were designed to float just below the surface of the water, being made just a shade heavier than surface water but lighter than deep water. They were not very successful, though, for the hydrostatic mechanism was so delicate that it easily got out of order, and, besides, it failed in water of varying saltness, for, you know, the salter is water, the heavier it is."

"Is it?"

"Of course. You know how much easier it is to swim in salt water than in fresh? That's be-

cause you don't sink down so far. In very salt inland lakes, like some of the residue lakes of the Caspian Sea—the saltest in the world—or in Great Salt Lake in your own country, or in the Dead Sea in Palestine, it is impossible to drown. A chap could swim there with his shoulders clean out of the water. A mine which would sink to the bottom in fresh water, might be flush with the surface in sea-water and be exposed for a third of its depth in a very salt lake."

"Is that why salt-water and fresh-water fish are so different?"

"Exactly. A frog, taken out of fresh water and put in the sea, will lose weight, dropping a fifth of his weight in a very short time. That means that the fluid in his body has oozed out into the salt water by a property which the scientific chaps calls exosmosis. On the other hand, if you take a true salt-water fish and put him into absolutely fresh water, he will begin to swell up and will die, because the fresh water outside oozes into his body, and this is called endosmosis.

"But all sea-water is the same, isn't it?"

"Not much! In the Arctic Ocean, you know, where there is a great deal of melting ice, the surface water is comparatively fresh, though the bot-

tom is salt. The Atlantic is salter than the Pacific, and the North Sea is less salt than either. So, you see, a mine which would work all right by a delicate hydrostatic balance in the middle of the North Sea would come to the surface in the English Channel, which is salter, and would sink inshore if near a place where an outflowing river injects fresh water into the sea. No, it was necessary to invent something which would do its own adjusting to the proper depth, taking into account the varying salinity and density of ocean water."

"But you couldn't make a steel ball do all that by itself!" protested Jed.

"They jolly well did, though. When you come to look at it, too, the invention is fairly simple, although it sounds such an impossibility. As a matter of fact, this type is practically the only floating submarine mine that is used. Notice, the words 'floating' and 'submarine.' That means that it floats, and yet that it stays submarine and does not come to the surface."

"How in blazes can it do that?"

"I'll show you. This submarine mine, which is called the Leon torpedo—though it isn't strictly a torpedo, because it has no horizontal movement, but only a vertical movement of its own—is a

Swedish invention, first perfected in 1907. Originally the motive power was compressed air, but now electricity is used. I'll explain you the modern type.[1]

"The Leon is a steel cylinder 5 feet 2¾ inches in length and 1 foot 8¾ inches in diameter. It is divided into three sections in its length. On the top is a spur from which project horizontally four arms, each terminating in a double horn or spine, fitted with plungers which serve the same purpose as those in the mechanical mine I described you, and which probably were the destruction of the *Puritan*. You see, with four arms on each side, each with two horns shaped like a U and which project evenly with the sides of the cylinder, no matter at what point a ship might strike the mine, it would tilt, thus bringing one of the horns against the vessel's bottom, driving in the plunger, closing the circuit and exploding the mine.

"The upper of the three sections is filled with TNT and, like other mines, has a central tube, now made of a very thin shell of hard rubber, in

[1] In the later years of the war, some modifications were made, especially with regard to stabilization, but the general principle remained unchanged.

which tube is placed all the firing mechanism, the fulminate of mercury and the priming, often dry gun-cotton. So far there is little difference between the Leon and any other mechanical mine.

"The second section contains only a battery of accumulators, which are simply voltaic cells in which an electric current is produced by chemical action and which recharge themselves by means of a reverse current. These are storage batteries, but, like most modern storage batteries, they combine primary and secondary cells. These accumulators provide the slight current needed to activate the firing mechanism as well as the power supplied to the motor which drives the machinery situated in the lower or third section of the mine.

"The motor, the propelling mechanism, a sensitive hydrostat, a clockwork regulator and a stabilizer, are all found in the bottom section. Here the operating mechanism is the motor and the controlling mechanism is the hydrostat. This hydrostat may be one of several types, all, however, based upon the principle that the deeper the immersion in the water, the heavier the pressure."

"How does that work?" asked the boy.

The young officer shrugged his shoulders.

"There's no great trick to that," he said. "Take a simple form, such as is used in regulating the depth at which torpedoes travel. Suppose, at one point of the shell of the mine, there is inserted a very thin plate of spring steel. On the inner side of this plate is a copper bar. It takes only a slight pressure on the outside of this spring steel to bend it in, just as the pressure of an air-wave caused when you speak bends the metal plate of a telephone transmitter. When the plate is bent, the copper makes contact with two poles inside the shell of the mine and closes an electric circuit. There's lots of other kinds of hydrostats, but this one will serve as an illustration.

"Then, you know, the closing of this circuit connects the motor with the battery and starts the propeller whirling, which it does at about 200 revolutions a minute. Now the propeller being at the bottom of the Leon, when it begins to turn, it drives the mine upwards towards the surface. As the mine rises, the pressure of the water on the hydrostat becomes less, the spring plate which has been bent in begins to straighten out until it breaks contact with the poles, opening the circuit and disconnecting the motor. Whereupon, the propeller slows down and stops."

"I think I get the idea," said Jed, slowly. "The mine is heavier than water, isn't it?"

"A bit, yes."

"And it sinks down until the hydrostat starts the motor, which starts the propeller. That drives the mine up again until the hydrostat quits, when the propeller stops and the mine starts to sink again, to begin the business all over again when it gets deep enough."

"You've jolly well got it right," affirmed the lieutenant.

"And what's the stabilizer for?"

"Well, that's set before the mine is put adrift, you know, and allows compensation for different densities of water. There are some Leons equipped with automatic stabilizers, but you don't need to go into the details of those."

"And you spoke of some clockwork, too."

"That," the officer replied, "is a jolly lot more important. It operates in two ways, sometimes as a cut-off to the firing mechanism, rendering the mine inert prior to a certain time or after a certain time; or it may act as a cut off to the motor mechanism, determining the periods when the action of the hydrostat becomes operative."

"Just what for?" queried Jed.

"Take the thing in actual practice. Suppose a small ship is being followed by several enemy ships and her only chance is to run. If she can drop a number of floating mines behind her, there's a strong chance that one of her pursuers will hit a mine and blow up. For this, then, the clockwork should be set so that the mine is 'live' within two or three minutes after it is dropped in the water, this being long enough to let the ship which dropped it get out of the way. But, if the fleeing vessel should be in home waters, it would be dangerous to leave floating mines about, and so the clockwork is also set to cut off the firing mechanism, say, after two hours. Then, if a home fleet came out to chase the invaders back, they would not be in danger from the floating mines that their own side had sown. You spot that?"

"Sure!"

"Suppose, now, that you want to try and blow up an enemy fleet in one of his own harbors, under the protection of the guns of his fortresses. You can't go in and give battle, and the channel mayn't be deep enough for submarine operations. You can send in floating mines, however."

"How? You said they only had an up-and-down movement."

"There's the tide, my boy," came the answer. "You set the mines afloat on the ingoing tide. Now, mark. The tide runs in for six hours and out for six hours, so that if a floating mine is dropped in a certain place, at the end of twelve hours it will be back where it was before. But—" he paused, for emphasis, "if the clockwork of a mine is so set that the propeller which keeps it afloat works only for six hours and then is cut off for six hours, you can see that the mine would sink to the bottom during the ebb tide and move in with the flowing tide. Slowly, but surely, therefore, it would work its way into the harbor and go bobbing about among the bottoms of the vessels anchored there. Presently it would knock against one, and bang! there would be one less ship for the Kaiser."

"And that's considered fair?" asked Jed, a note of doubt in his voice.

"That's fair enough," answered the officer, "it's as fair as launching a torpedo at an enemy's ship. You are launching a torpedo, in fact, but letting the tide do the carrying and having a whole fleet as your objective instead of a single ship.

"What isn't playing the game, is to strew the sea with floating mines, on the chance that an

enemy warship may hit one. That way, a peaceful merchant vessel, a neutral vessel, a Red Cross hospital ship, anything, may equally well prove to be the victim.

"I'll admit, personally, I don't like mines, and I don't believe that navy men do, generally. There's something sneaky about a mine. It's a good deal like hitting below the belt. Torpedoes and big guns and that sort of thing are all in the day's work, but to look out over the sea, the good old sea, and to think that hundreds of these floating horrors may be hidden under its surface it's rotten! It's like seeing the face of some one you think a lot of, all covered with horrid sores.

"Give me sea-room and the great guns. Give me the smell of battle and the screaming of shells and the white water-spouts of falling shots around, and I'll go down, if I have to, under the white ensign, and cheer for it to the last crack. But to be stabbed in the back by a mine, to see nothing, to hear nothing, to know nothing but that the good ship beneath you is sinking, no!

"Sea-room, the great guns and an open fight. That's worth a man, no matter what the end may be!"

## CHAPTER IV

### FIRST BLOOD

NOT many minutes after the sub-lieutenant had gone up on deck, the Sick Berth Steward came in to the steel-walled hole known as the sick bay. Hospital accommodations on a Destroyer are about as roomy as a bathing machine, though marvelously equipped for their purpose. He brought the cheering news that Jed might get up.

"It would be nothin' less'n a crime," he said, "to keep you below when there's fun goin' on."

"What fun?" asked Jed.

"Why," his informant replied, "we've run splash into a Fritz [1] sea-hen layin' cuckoo's-eggs, an' though the flagship asked her to stop, mos' partickler-like, an' sent a 4-inch persuader after her, she seems to have remembered a pressin' app'intment somewheres an' is hurryin' to keep it."

"You mean a mine-layer?" queried Jed, guess-

[1] At the beginning of the war, the navy always spoke of the Germans as "Fritz." Towards the end, nick-names became bewilderingly numerous, each ship had its own pet by-word.

ing at his meaning, though naval slang was new to him. "Oh! How bully! Where are my things?"

The attendant produced the clothing, now roughly dried.

"Blimy! I wisht I was a sockin' gunner, so I do," grumbled he, as he brought the clothes, " 'ow much 'll I see, down 'ere?"

"Lummy, if you want to be in the stalls," mocked the steward officer, "you'd better do it proper! I'll send up to the Owner[1] to tell 'im that Mr. 'Orspital Attendant Brown is plannin' a stroll arm-in-arm with 'im on the bridge, like 'e was a slavey out for an airin'!"

The other, conscious of lower rating, growled an unintelligible reply, concerning the ancestry of "poultice-mixers" and his superior, a long-service man, seeing that Jed had failed to grasp the joke, explained that the officer in command of a ship, whether Captain of a Dreadnought or Lieutenant-Commander of a Destroyer is more difficult of approach than an archangel in the celestial courts.

Jed did not wait to listen to the rest of the

[1] The officer in command of a ship is generally called the "Owner."

*Courtesy of "The Sphere."*
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GALLANTRY IN THE FORETOP.

After the battle cruiser *Inflexible* was hit, one of the Able Seamen carried a wounded comrade down the rungs attached to the leg of the tripod mast, a tricky climb at all times, as these rungs are covered with greasy soot from the smoking funnels near by.

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repartee, for he was in a hurry to be up on deck. So, escaping from the hot, oily atmosphere of the sick bay, where the air itself seemed to throb with the endless vibration of the steel walls, he took hap-hazard the first steel ladder he came to, and, after a short climb, found himself on deck.

Not more violently did the rush of sea air strike his face than did his uselessness and alien position suddenly strike his consciousness. He felt he did not belong, he knew he had no business aboard. In all the world, there is nothing so aloof and so scornful of an intruder as a modern warship, be she pigmy or colossus.

A vessel of the British Navy is not manned by her complement of men, but is one with her complement of men. The stoker is as inseparable from the steam as the steam from the stoker. The souls of engineers and engines are wedded. The youngest member of a gun-crew, serving on an ammunition hoist, feels himself a part of the gun, just as the Captain lives, moves and has his being with his ship.

Aboard a man-o'-war, an undetermined minute is a thing unknown. From the youngest "Ord" (Ordinary Seaman) to the grizzled G. L. I. (gun-layer, first class) of the lower deck, from the

grimiest member of the Black Gang to the three-stiper engineer, from the most callow "snotty" (midshipman) to the Commander on a 29,000 ton battleship, there is not one minute of his time day or night, that is not decided, regulated, judged and valued to a hair. Nor is a second of that time wasted or misused. To the landsman it may seem to be, sometimes, but every navy man knows that the power of the Navy lies in the Spirit of the Navy, and that out of such spirit a Navy man never steps.

Likewise, whether the ship be a Q. E. (a super-Dreadnought of the *Queen Elizabeth* class), a "Cat" (such as the famous battle-cruiser *Lion*), or an ancient "County" (such as the gallant *Kent*), she has even less space wasted between her sheering bow and her quadruple propellers than can be found in any delicately adjusted, many-jeweled watch. Each cubic inch of a warship from keelson to truck is a marvel of adaptive perfection, not the perfection of Organization, which is something purely human, but the perfection of Order, which partakes somewhat of the divine.

Moreover, be it well understood that a battleship is most emphatically not a fighting machine manned by men. She is a creature belonging to

the organic world. Her guns, her engines and the crew which handles them can no more be dissociated from her very being than a man's fingers, his bodily organs or the life which operates them can be dissociated from himself.

A stranger on a battleship is about as important as a fly which has settled on a man's clothing. An intruding stranger is as welcome as the same fly when it has settled on a man's nose—and receives equally brusque treatment.

The British Navy is the unquestioned ruler of the seas and is likely to remain so for one reason. To a Navy man it is not merely The Service, it is a Religious Order. Its spirit is not the spirit of obedience, but the spirit of devotion. From cadet to admiral, every officer is a priest of naval mysteries and holds his rank in almost sacerdotal reverence. And the Lower Deck embraces the Minor Orders and acolytes of the same. No navy in the world but one has this soul.[1]

Moreover, and this is equally potent, a navy cannot be made, it must be bred. Officers and men alike must come from families whose blood

[1] Every British naval officer, afloat or ashore, will outwardly deny this paragraph furiously, and inwardly, will know every word to be true. All the traditions of the Navy demand a reticence that is painful. "Brag" is the unforgivable sin.

is tinct with salt and whose ears are hereditarily attuned to the call of the vocation. Germany may have perfection of mechanical organization, France may have splendor of gallantry, and America may have expert marksmen, but the sailors of these powers are *in* the navy, they are not *the* Navy. It is doubtful whether any other nation than a viking race, an island race, a seafaring race, could ever bring forth a navy of the British type.

Something of all this Jed felt instinctively, although he was not upon a first-class Battleship sheathed in thirteen-inch armor, but on a Destroyer with a skin like steel paper, drawing but a few feet of water, yet possessing oil-burning turbine engines of 30,000 horse power, able to drive her through the water at 34 knots, or 34 sea-miles an hour.

The day was hot and the sun strong, but where Jed had crouched, by the angle of the chart-room, just aft and amidships from the starboard bow 4-inch gun, the sea air blew strong and chill. The flotilla was proceeding at high speed, the full speed of the flagship ahead. This was the light cruiser *Amphion* of the Boadicea class, a ladylike-looking craft with a slender hull, a single raking

mast and three equal-sized funnels. Compared with the Destroyers she looked like a swan leading sooty gulls into action.

The chase, the German mine-layer, appeared in the distance. She was a fast vessel, being, as it afterwards turned out, the *Königin Luise*, formerly a passenger boat of the Hamburg-American Line. Her speed, though fair, was not great enough for her to escape the flotilla. She had opened a scattering fire after the *Amphion's* first warning shot, but her guns were not heavy enough to be of real service.

Jed, watching from his corner, saw a little flutter of signal flags run up to the yard-arm of the flagship. Though difficult to discern without glasses, Jed read the letters QLOP.[1]

The boy guessed at once that this signal would not have the customary meaning of such signal in the International Code. He did not know, of course, how carefully guarded is the Naval Signal Code for use in war. It is one of the most secret of all secrets. For an officer to disclose such signals to a civilian is punishable with a term of imprisonment, as well as being broken from the

[1] The reader will understand, of course, that the letters given are merely illustrative, not the signals of the Code.

service. Every copy of the book is bound in lead so that, in the event of the loss of a ship, there shall be no danger of its floating and falling into the hands of the enemy.

Sharp as were Jed's eyes, those of the Yeoman of Signals, a petty officer on the upper bridge, were even sharper, and the flags had hardly reached the flagship's yard-arm when they were read and interpreted.

"*Lance, Lark,* and *Linnet* will prepare to put on full speed, sir."

The lieutenant-commander nodded. The Yeoman turned to see that the signalmen were preparing the same hoist, in token that the message had been correctly received. Rivalry is of the most intense kind in the Navy, and, on each of the three ships, the fingers of the signalmen worked like magic to be the first to run up the response. In thirty-nine seconds all the flags had been picked out, arranged, bent on to the halliards and hoisted. There was not two seconds' difference between the first and the last.

Then, a moment later, his eyes glued to the small telescope, the Yeoman of Signals said, sharply:

"Signal down, sir."

The Navigating Lieutenant, standing by the voice-pipes, leaned over and sent word to the engine-rooms. At the same second, therefore, on all three ships, a black oily smoke showed that the fuel was being increased and the steam pressure gages began to creep upwards.

Jed noted then, and after, that with one or two exceptions, orders from the flagship do not go into effect until the moment that the flags begin to come down on the flagship. Thus there can be no error in understanding the orders since the ships following have had to hoist equivalent signals, and there can be no divergence of time in following the order, for all ships see the down-hauling at the same moment. When a battle-line is too long for the rearmost ships to see the flagship, or if there is low visibility, due to fog, a ship is stationed on the beam of the line to repeat the flagship's orders to the fleet, squadron, or flotilla, as the case may be.

Another little ribbon of color crept up to the yardarm of the flagship.

"*Lark, Linnet,* and *Lance* twenty degrees to starboard, sir."

Again the lieutenant commander nodded, and the signalmen ran up the flags.

Warships demand much more exact and careful steering and handling than merchant vessels, for they travel usually in fleets, wherein rigid alignment is as necessary as proportionate distance. Unless this were superlatively exact, collisions would be frequent. Compass directions, therefore, are given in degrees instead of in points.

All circles consist of 360° and the naval compass is thus divided with the points marked on an inner circle on the card. Thus a complete compass card contains on its innermost circle the points, half points and quarter points; on the next circle the letters representing those points, (such as N E S W); next the hours and minutes of the circle; next the circle divided into degrees from N 0° to S 180°, both easterly and westerly; next a circle of exactly the same kind, with 0° at S; while the outermost circle contains degrees on a circle divided into quarters, with 0° at E and W, and 90° at N and S. Since there are 32 points and 360 degrees, it follows that each point is equal to 11° 15′, an awkward number which greatly complicates the already puzzling problems of deviation and variation with which every navigator has to reckon.

Jabed Wille had driven solidly into Jed's head

some of the primary rules of navigation. The boy had learned that the compass needle does not point north and south, that "true as the needle to the Pole" is an absurd phrase. The North Magnetic Pole is in a land called Boothia Felix in the northern part of Canada. The South Pole is on the Antarctic Continent.[1] It is easy to see, therefore, that at every point on the Earth's surface, in order to find true north, a navigator has to figure from where the compass actually points to where it ought to point.

This angle which the compass makes with the true north is called the variation, and navigators can take the angle all ready worked out for them for almost any part of the world on printed charts. The changes in the variation of the Pole itself are so slow that any modern chart will be approximately accurate.

Deviation is a different thing entirely, for it varies with every ship. All ships, especially iron and steel vessels, are magnets in themselves and their magnetism affects the compass needle, causing it to deviate from the correct magnetic merid-

[1] North Magnetic Pole is about Lat. 70° N. and Lat. 97° W.; the South Magnetic Pole about Lat. 74° S. and Long. 147° E. The word "about" is used, for the Magnetic Poles are not stationary; they move within narrow limits.

ian. In other words, the needle is bent away from pointing to the magnetic north. Thus, not only does a compass not point true to the true north, but it does not even point true to the magnetic north. In handling a ship all these errors must be figured out.

A ship becomes a magnet by the necessary hammering done upon her when she is being built, just as an iron bar will become magnetized by hammering. Moreover, since the magnetism which is thus taken up by the ship is taken from the great Earth-magnet, such ship's magnetism will depend for its character on the direction in which her bow was placed when she was building and upon the part of the world in which she was built.

A ship built in a shipyard in northern latitudes which lay in the stocks with her head northwest, for example, will be magnetized in such a way that her starboard bow acts as the north-seeking end of a magnet, for her starboard bow pointed to the north while she was being hammered. In such a ship, when she is afloat and steering north, the sub-permanent magnetism operating from the starboard bow will repel the like or north-seeking end of the needle, following the rule that like poles

of magnets repel each other while unlike poles attract. Thus the compass will be deflected, giving it, in this case, port or westerly deviation.[1] A shipmaster who does not allow for such errors will soon drive his ship on the rocks. Navigation is an art requiring not a little calculation and a great deal of care.

With the flagship's signal order before his eyes, therefore, Jed figured out the sum in his head, as, many a time, he had been compelled to do in the chart-room of the unhappy *Puritan,* now at the bottom of the sea. Reducing to points the "twenty degrees" called for, and, judging by the sun that the flotilla was heading ENE, Jed found that this shift to starboard would correspond closely with a new course at E ¼ N. He had just worked this calculation to his own satisfaction when he heard overhead:

"Signal down, sir!"

"Starboard, Twenty!" said the navigating lieutenant down the voice pipes, and, on the instant,

[1] As ships are rarely built with their heads at exactly the cardinal points, some of these compensations for deviation are very complicated. Moreover, there is also deviation from induced magnetism due to the presence of soft iron in ship or cargo, and, furthermore, deviation from heeling error, all of which have to be considered.

the quartermaster and helmsman on the lower bridge spun the little wheel which set the steering gear in action. Warships do not steer with hand-power wheels. At precisely the same second, the *Lark* ahead and the *Linnet* astern performed the same movement, and the three Destroyers struck out to starboard as though all three were turned by one helm. One of the Wonders of War at Sea is the wonderful handling of warships at sea.

Up fluttered the flags anew.

"*Lance, Linnet,* and *Lark* will independently take up the pursuit of the enemy," read the Signal Yeoman.

It was the word for which the Destroyers had been waiting, the word for which the gunnery and torpedo officers and men had been on the alert, the word for which, above all, the Engineer-Commanders below, keyed to their utmost, were expectant. It meant full speed with an enemy at sight, it meant the opportunity for each Black Gang to show the flotilla what their beloved engines could do. The thrill of the racing hoof-beats on a race-course is as nought to the thrill of the racing throb of a Destroyer's propellers as she creeps up, up and ever up, sometimes even

beyond the supreme speed her builders had expected of her.

Unleashed, the three Destroyers tore into the gray water, clutching at and throwing the waves behind them. Their steel frames trembled as though they themselves were obsessed by the same demon of excitement that beset their masters. The hum of the engines rose to the hunting snarl. The steam panted like over-driven lungs.

On either side of their bows an upcurling slice of water fell in a cutting stream upon the forward deck, drenching the gun-crews behind their shields. In ten seconds Jed's newly dried clothes were as wringing wet as though he had that instant been picked out of the sea.

"We ain't no floatin' palace," remarked the gun-layer, joyfully, his eye now glued to the telescopic sights, "but we 'ave got front row seats for this 'ere show."

"Right-o!" replied the loading number, touching with his bare foot the black and yellow shells piled near the gun, "an' 'ere's the bokays all ready to 'and the preemer donner."

The gun-crew grinned, and one of the younger men, catching Jed's eye, winked happily.

The *Königin Luise* was a fast ship, the *Amphion*

was faster, but the Destroyers split the sea apart as they raced by the flagship. They had speed enough to overtake the foe and, at the same time, to keep from following in her exact wake. That would be too dangerous, loaded, as they knew she was, with some hundreds of globose volcanoes of destruction. At best, the mine-layer had but 22 knots, the Destroyers could reach 33, and one of them, the *Lark,* which had left her builders' hands on the Saturday before, was making 34 knots and therefore steadily drawing ahead of her sister destroyers.

Truly, the Furies were on the trail!

Jed, watching, on the *Lance,* suddenly saw from the fore-deck of the *Lark* a spurt of brilliant orange-colored flame and heard a rasping roar. This was followed by the rising of a billowing cloud of brown cordite smoke.

From the bridge over the boy's head droned steadily the voice of a sailor reading the range-finder, and, judging that the *Lark* had gained at least half a mile on her sister ship, Jed estimated that the first shot was fired at a range of 2,000 yards or a little over a mile. A ship only a mile away is close.

Then, on the *Königin Luise,* there came a dull

red flash followed by a rising cloud of gray-yellow smoke.

"Got 'im right on the nob with the first 'it!" declared the gun-layer, enviously.

The yellow smoke had hardly declared itself over the victim when the orange flame and the roar from the *Lark* told of a second shot.

"Over!" said some one on the bridge, above.

"When's our chanst comin'?" grumbled the loading number.

The second shot had gone over the ship, partly, it seemed, because the transformed liner had begun to slew.

"Swop me lucky if we ain't scrapped 'er bridge!" declared the gun-layer, who, with his eyes on the telescopic sights, could see clearly what was going on.

The words were hardly out of his lips when the *Lark* fired again.

There was a moment's silence and then, for the second time, the distant red flower and the yellow smoke told of a hit.

"Two out o' three at this speed ain't so dusty," remarked the gun-layer, with professional approval, reckoning nothing and thinking nothing of the mangled bodies on the deck of the enemy.

The orange flash and the roar told of a fourth shot and Jed, watching, saw it strike where the third had struck. A flash, followed by curling smoke, told that the victim was on fire.

"Good egg!" Jed heard the ward-room approval from the bridge. "All out and no runs for Fritz!"

"Stand by, the sea-boat's crew," came the commander's order quietly. Second only to the Navy's eagerness to destroy an enemy vessel is the eagerness of the Service to save life.

Thirty-three knots is thirty-eight land miles per hour, and in less than two minutes' time, the *Lance* was ranging up to the starboard quarter of the German mine-layer, the sea-boat's crew was ready in the whaler, the lowerers by their posts at the davits.

As the telegraph rang to stop the engines, came the order:

"Out pins!"

The whaler dropped lightly to the water and sped on her life-saving errand.

The *Königin Luise* was in a bad way. Her bridge and upper works were "scrapped," as the gun-layer had put it, and, evidently, the first shell had done some fearful damage to her interior.

*Courtesy of "The Sphere."*
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**Still Fighting, Though in Flames.**

**Though she was an inferno of fire within and her iron-work was cherry red, this German Light Cruiser flew her flag and barked defiance with a single gun at a British destroyer which had overhauled her. She would not surrender and was sunk by a torpedo.**

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The third shell had blown a huge hole out of the stern and the rudders were useless. The fourth 4-inch shell had set the after part of the ship on fire, and the men aboard, knowing the dangerous character of their cargo and fearful every moment that the mines might explode, were getting the boats out in a panic. The German captain, waving a revolver, in a perfect madness of fury, was trying to call his men back to work the one small gun that remained uninjured, but his fellow officers seized him by force, overpowered and disarmed him and put him into one of the boats. Scores of sailors had leaped into the water after the first shell had struck, preferring their chance of drowning to the more terrible likelihood of being blown to pieces by the ignition of the tons of explosive below.

In just two minutes from the firing of the first shot, the *Lance's* boat was picking up survivors. The *Linnet's* boat was about thirty seconds behind. The *Lark's* boat, first at the scene, was already pulling back to the Destroyer, loaded to the gunwales.

Two minutes later the *Amphion* came up and further boats were launched. There was no time to lose. Six minutes after the first 4-inch shell

had left the *Lark's* gun, the *Königin Luise* disappeared beneath the surface of the water. The four shells had taken but twenty-two seconds to fire, the mine-layer had taken but six minutes to sink.

Seventy men went down with this first enemy victim of the war, most of them either killed by the first and third explosions or caught by the fires below. The boats of the British flotilla picked up 120 of the survivors, nearly all of whom were taken aboard the *Amphion,* where, scant though space might be, it was more possible to feed them than with the slim accommodations of a Destroyer.

A half an hour later, all of the boats were inboard, and there was nothing left to show where a ship had been, but a spar or two and some floating débris on the sea, those little clues, which, like the bleaching skull in the desert, tell their epic of disaster. No such thought occurred to the bluejackets.

"It's fust blood!" declared the gun-layer, chuckling. "Fust blood for us, that's wot it is."

"Bloomin' gun drill, that's wot it is, you mean," retorted the loading number. "Why couldn't they 'ave let us pasted 'im a few, just for luck!"

Jed, looking on and listening, a little taken aback and awed by what he had witnessed, thought that the *Königin Luise* had been "pasted" quite enough.

The mine-layer sunk, her survivors rescued and made as comfortable as possible aboard the *Amphion,* Jed's mind reverted to a question which had puzzled him ever since the sub-lieutenant had been talking to him about mines, but about which he had not had a chance to ask. The question that rose in his mind was how a ship like the *Königin Luise* could lay mines in the open sea, where the bottom was of constantly varying depths and yet measure the anchor chain to each mine with such exactness that the deadly trap would float below the surface at exactly the right distance to be struck by a passing ship. The more he thought over this, the more puzzled he got. Hoping to find his father and put the question to him, he started aft, when he almost ran into the sub-lieutenant!

"Hello, youngster," said the junior officer, genially, "hear the popping?"

"I was up on deck for'ard and took it all in sir," Jed responded. "She certainly got hers!"

"Jolly well deserved it," the lieutenant replied.

"You didn't know, I suppose, that was the same boat which laid the cuckoo eggs that sunk your trawler?"

"I'd guessed as much. But how do you know it was, sir?"

"Little Dutch kids recognized it," came the reply.

"And their brother, who was on board?"

"He has turned up all right," was the cheering answer. "He's on the *Amphion*. Didn't want the kids to know he was hurt till he gets better. Needed a surgeon, though, and we couldn't look after him here. Well," he concluded, "that's one less for Fritz. Mrs. *Königin Luise* won't lay any more mines."

"Say," said Jed, as the young officer turned away, "I've been wondering ever since this morning how a mine-layer lays mines and I can't dope it out. Could you tell me, sir?"

"What's puzzling you? It's jolly well simple enough!"

"It doesn't look simple," persisted the boy. "At least, I can't seem to work it out. The bottom of the sea isn't always the same depth, and I should think it would take an awful long time to measure just where each mine is to go,

and to cut off enough anchor chain to be exactly the right length, and to drop it at just that exact point when you're steaming along, and there's a wind, and a current, and—"

"Steady there!" interrupted the sub-lieutenant, laughing. "I'm not surprised you're mixed up if you thought it was done that way. That would be the old Harry of a job. Mine-laying's like everything else, nowadays; it does itself, mostly. A modern mine measures its own depth and fixes its own position so that it will jolly well float at the right distance below the surface, all by itself. A mine-layer hasn't anything to do but to take out the pin that makes the mine 'live' and drop it overboard. It makes no diff whether it's in six fathoms of water or sixteen."

"How in blazes can that be done?" the boy queried.

"Oh, it's easy enough when you know," his ready informant replied. "You see, a mine anchor isn't a bit like the sort of anchor you see in books. It's really like a heavy box, containing a reel on which a light but strong steel chain is wound. The mine, which is lighter than water, floats; the box-like anchor sinks. As the box sinks, the reel, which is fitted with a ratchet and

pawl, or cogwheel into which a check can be put, revolves, letting out the chain, leaving the mine floating at the surface as it goes down.

"Now, this cog or pawl, which is made to fit into the cogwheel and which can stop its revolving, is like a lever with a strong spring. On the end of the lever is attached a short piece of rope to which is fastened a pointed heavy piece of lead. Owing to its shape and weight, this lead sinks faster than the anchor box, thus keeping a steady strain on the lever, which, in turn, keeps the pawl or cog from snubbing into the wheel.

"The moment that the lead touches the bottom, though, the weight is thereby removed from the lever, the spring forces in the pawl, the cogwheel is stopped, the reel ceases to revolve, the chain comes taut and the mine is pulled down below the surface. So, you see, if the rope to which the lead weight is fastened was ten feet long, the pawl would snub in and the reel which lets out the chain would stop revolving ten feet above the bottom, no matter how deep or how shallow the bottom might be and would drag the floating mine down those ten feet.

"If the mine is intended to float very near the surface, to catch Destroyers or Mine Sweepers, the

rope with the lead weight would be made only three feet long, which would anchor the mine three feet from the surface. If the mines were intended to be deep, for Battleships, say fifteen feet, then the rope from the lever would be fifteen feet long. The anchoring dodge works itself, you see, and it's jolly simple, once you've thought of it."

"And it looked so impossible!" exclaimed Jed.

The young officer shook his head.

"When it comes to the little tricks of the game," he said, "Fritz is all to the good. When he loses out like he generally does, it's because of something else. He can't think out anything on his own, he has to wait to copy some one else. That's one thing. The other is, that he won't play the game fair. You ask your father about that. I heard the Bloke [1] telling him about it, just before the *Lark* started this show."

"Where is Dad, do you know?" queried Jed.

"I saw him aft, with the Dutch children, just a few minutes ago. Now, if you'll excuse me—" the lieutenant added politely, and disappeared.

Jed sauntered aft and, as the young officer had said, he found Jabed Wille there, looking out over the sea. It was the most sheltered place on

[1] Officers' usual designation of the Second in Command.

deck, and Mina was playing happily beside him.

"Hello, Jed!" said the father. "How're you feelin'? Where've you been?"

"I'm feeling fine," the lad answered, "and I've been for'ard all the while during the scrap, just by the starboard bow gun."

"See the mine-layer go down?"

"I saw the whole business!" declared Jed. "I don't think the gun-crew liked having me around any too well, but I got into a corner out of every one's way and since no one told me to go below, I stayed right there. It was a barrel of fun while it lasted, but it was all over so quick! I want to see a real big long naval battle, between some of those Super-Dreadnoughts you were talking about the other day."

"You won't ever see any," responded the skipper, sententiously.

"Why not?"

"Because there won't be any," was the reply. "I've been talkin' with the Commander about that. Look-a-here, Jed, this war broke loose yesterday, didn't it?"

"That's what that other Destroyer captain said," the boy agreed.

"Well, so far as the navy end of it is concerned,

I reckon the war's over an' the Germans are good an' licked."

"Has there been a battle already?"

"No, an' there's no need of one. England's like a cat watchin' at the mouth of a mouse-hole. So long as the cat keeps his claws sharp, doesn't go away, an' doesn't go to sleep, there's not much chance for the mouse to come out, is there? That's just about what's happenin'."

"But Germany's hardly a mouse, Father!" Jed protested. "I thought she had a navy mighty near as good as the British."

"I thought so, too, until this mornin'," the skipper rejoined, "when I got hold o' the facts. My boy, Germany hasn't got either the ships, the guns or the men. She's just three years behind England in everything that has to do with the navy. I got so interested in what the Commander told me this mornin' that I just dotted down the figures. He had 'em in his head. Germany's a back number, so far as the sea's concerned."

"Just how?"

"Well, the real beginnin' of Germany as a sea power, the way the Commander put it," the skipper began, "was in 1900, when the Reichstag

passed a law providin' for a large an' continuous naval expansion an' also decided on diggin' and enlargin' the Kiel Canal. For the next six years, Germany built ships slicker'n greased lightnin'.

"Then came the *Dreadnought,* Jed, England's idea, that ship which changed the designs of all the navies o' the world. I told you the other day, you mind, how the all-big-gun-ship brought a new principle in naval warfare. What I didn't tell you, because I didn't know it myself, was that the *Dreadnought* was a mystery ship. The Navy, which is the most silent an' secretive organization on earth—compared to which the Secret Service is a chatterbox—planned, built, equipped and put the *Dreadnought* in commission before the German or any other European navy had given serious attention to the all-big-gun-ship plan.

"Right around this time, all navies were merely imitatin' England. It wasn't until after the *Dreadnought* was laid down, in 1905, that the first American ships of the Dreadnought type were begun in 1906. These were the *Michigan* and the *South Carolina,* ships whose names you ought to remember, Jed, for they were the beginnin' of our own new navy.

"This is where the States slid ahead of Ger-

many, for, after the launchin' o' the *Dreadnought,* Germany had to make pipe-lights of all her Battleship plans an' scramble around to get out some new ones to lay keels for war craft which should come up to the English, as far as possible.

"Now," he continued, looking at the back of an envelope, on which he had penciled some memoranda, "I put down the dates, for they were mighty interestin'. The *Dreadnought* was put in commission Dec. 11, 1906; the *Nassau,* which was the first of the German Dreadnoughts, was put in commission May, 1910. In short, in 1910, four years ago,[1] England was three years an' a third ahead o' Germany. An', even then, with a model in front o' them, the German *Nassau* only carried 11-inch guns as against the 12-inch guns o' the *Dreadnought.* Put it another way, Jed. England's got Battleships on the sea now, or will have in a month or two, which Germany won't be able to touch for three years an' more.

"Now, my boy," he continued, "look a minute at the actual size o' the fleets. Considerin' the Dreadnoughts an' Super-Dreadnoughts only, England's got twenty-two as against the German six-

[1] The speaker is here speaking in 1914, two days after the declaration of war.

teen. In Super-Battle-Cruisers, England has nine an' Germany three, but four o' England's are in foreign waters an' one o' Germany's, leavin' five to two.

"To be fair all round, there's three o' the German craft, the *König,* the *Grosser Kurfürst* and the *Markgraf,* which are pretty good. But even they are away behind the British Navy, for they've got only ten 12-inch guns, while the *Iron Duke* class carries ten 13.5-inch guns, an' the Cats eight 13.5's. At the same time the *Iron Duke* ships are half a knot faster, an' their armor is half an inch thicker. The Cats are much more lightly armored but nine knots faster."

"But I don't understand," said Jed. "I thought you said that England was three years ahead. That looks as if the Germans weren't so very far behind."

"It looks a little that way," his father explained, "though there's a pile of difference between a 12-inch an' a 13.5-inch gun, but that isn't the main part of the story. England's now got on the stocks an' nearin' completion, a right tidy bunch o' Super-Dreadnoughts, more powerful than anything Germany has yet dreamed of attemptin'. One o' them, the type ship o' the class, to be called

*Courtesy of "Illustrated London News."*

THE CHRISTMAS PUDDING IN DANGER.

Aboard a destroyer in foul weather, perpetually drenched by icy spray, numb with cold, the vibrating craft tossing viciously, such a feat as serving a plum-pudding is as notable as a naval victory.

the *Queen Elizabeth,* an' just about ready for launchin', carries eight 15-inch guns, bigger'n anything afloat. She's a whacker of 27,500 tons, with 13-inch armor, an' yet, under her oil burnin' engines which develop 58,000 horse power, she can pound out a speed of 25 knots easy. Germany's biggest ships haven't anything heavier than 12-inch guns and can only reach 22.5 knots speed with them.[1]

"Then, if Germany wants to do anything, she'd better do it before England gets her new ships launched," declared Jed.

"That's just where the Kaiser is treed," the skipper answered. "I found that out this mornin'. The Germans can't do anything quick. I reckon they're in a blind lead, as it is. The cat's outside the hole with her claws all nice an' sharp.

"War's been threatenin' for quite a while, an' when we left Hartlepool a week ago, you remember, folks were beginnin' to talk. England reckons

[1] During the course of the war, England put into the water five Super-Dreadnoughts of the Queen Elizabeth class, and five, of Iron Duke speed, of the Royal Sovereign class. The metal carried by these eighty 15-inch guns was alone sufficient to overwhelm the whole German Navy. Toward the end of the war Germany put the *Bayern*, with 15-inch guns, in commission, just three years after the *Queen Elizabeth*.

the Navy as her first line o' defense an' three quarters of her naval strength is always kept in reach o' the British Isles. When war seemed likely, all the home fleets were concentrated. Germany is the ice-box an' the key is turned."

"How's that?" asked Jed. "The sea's big enough!"

"Which sea?" questioned the skipper, meaningly. "The Atlantic might be, but the North Sea isn't. Don't forget, son, that the North Sea is pretty durn small, an' there are only two ways out of it. One is the sou'west, through the Straits o' Dover an' that's only 21 miles across. The other's between the Orkney Islands, off Scotland, to the coast o' Norway, an' that's only 300 miles across. If Germany wants to get to open sea, she's got to break out either one o' these two ways. Now, if England can cork up these two channels, the Kaiser might have a pickle of a time pullin' the corks.

"Suppose the Germans tried to make a getaway to the north," he continued. "Lyin' low at a naval base in the Orkneys, Admiral Jellicoe has twenty-two Dreadnoughts an' Super-Dreadnoughts, an', to boot, a tolerable bunch o' Light Cruisers. In the Firth o' Forth, Admiral Beatty

has five of the 'Cats,' the most powerful Battle-Cruisers afloat, to say nothin' of a horde o' Destroyers.

"Against that, the Germans have got eighteen Battleships an' Battle Cruisers, all o' their ships bein' weaker, ship for ship, than the British. They haven't a Battleship as powerful as the *Iron Duke,* they haven't a Battle Cruiser as heavy or as fast as the *Lion.* As the commander said, of course we don't know but what Germany may have some private didoes of her own, up her sleeve, an' she may spring a surprise on the English, but that's only guesswork.

"Now, on the charts, from the middle o' the line between Scotland an' Norway to Jellicoe's base is about 150 miles, and to Beatty's base, about 300 miles. The Germans, at their naval base in Heligoland, are 500 miles from the same spot. It's a cinch, then, that if the Germans started for the north, Jellicoe's fleet, actin' as a cork, would have plenty of time to take up position to stop 'em, an' he has ships enough to trim them to a fare-you-well. Meantime, while Jellicoe pounds 'em in front, the big Battle Cruisers under Beatty can take 'em in flank an' rear an' make mince-meat o' the support. If the Germans break off a

part o' their fleet to have some fun with Beatty, then they'll be so short that they won't have the ghost of a show with the Super-Dreadnoughts under Jellicoe."

"It sure does look as if they were in a mess," agreed Jed.

"To the south'ard it isn't any better," the skipper continued. "The lay-out is right smart. The southern door, as I said, is the Straits o' Dover, so narrow that you can see across it. Now, from Heligoland to the Straits is 350 miles, from the Firth of Forth it is 400 miles, from the Orkneys, over 500 miles. The Germans could easy creep down the coast a good ways on a foggy day an' night an', that way, get a good lead on the northern fleets.

"Now, if England only had the two fleets I've been talkin' of, Germany could force the Straits before any of the Super-Dreadnoughts or Battle-Cruisers could get down there. Beatty's fast ships would be the chief danger, and, even then, it would be eighteen against five. That ought to make it easy for the Kaiser."

"But maybe," suggested the lad, scenting what was coming, "England has a cork for the southern bottle."

"You're dead right," his father agreed, "an' a good cork an' a tight fit at that. In the Thames, not more than 25 miles from the Straits, Great Britain has collected all her pre-Dreadnought Battleships, her Armored Cruisers, a flotilla of modern Destroyers, an' the old Torpedo-Boat fleet, to say nothin' of a right slick bunch o' submarines.

"It's a cinch that if the German fleet met this Thames collection in the open sea, Johnny Bull wouldn't have any show at all, for the big modern German vessels, with higher speed an' more powerful guns, could cruise out o' range o' the smaller guns o' the pre-Dreadnoughts an' hammer them to pieces just how they pleased."

"I don't see what good the old ships are, then," commented Jed.

"If you'd think a bit," said his father, "I reckon you'd see. It wouldn't do the Germans any good to lie off an' shoot at the Thames fleet, because their only reason to try the Straits would be a break-through. Now, 9.5-inch guns an' 20 knots aren't much use against 12-inch guns an' 22.5 knots, at long range work. But if the ships with the heavier guns have got to come into the range o' the smaller guns, then their armor

wouldn't protect 'em from such a concentrated storm o' metal as would come from thirty warships in the narrow channel o' the Straits o' Dover.

"If the Germans tried to thick it an' plunge through the Straits in close formation, three or four column line, they'd be just invitin' torpedoes. They couldn't send out Destroyers as a shield, because the Destroyers, themselves, would be sunk by the 9.5-inch guns of the pre-Dreadnoughts. In narrow waters, like that, the English submarines would have a right lively time, an', I reckon, there'd be some pretty torpedo an' Destroyer dashes. A torpedo isn't much use when ships are steamin' fast and maneuverin', but they're deadly in close quarters an' at low speeds. Now you see what good the old ships are, son."

"But why couldn't the Germans knock 'em off, one by one, an' then steam through."

"Hammering at long range takes time," the skipper replied, "an' probably, the British destroyers would put up a smoke screen through which the Germans couldn't see to shoot. Suppose the German ships were sighted half-way, an' the action with the Thames fleet lasted for seven hours; before that time Beatty would have steamed

the difference in distance between his base when the Cats heard the news, and the point at which the Germans had been sighted. The Cats are 28 knot ships. So if, in seven hours, the Germans hadn't broken through, they'd find themselves attacked in the rear. If they hadn't made the break by that time, they couldn't do it after, with five new foes poundin' them from behind with heavier guns an' more speed. An' they couldn't get back, either, for, by eight hours' time, Jellicoe, hurryin' down, would have come far enough to cut off the Germans from their home base. If the Germans were held up by the Cats for eight hours more, then the whole Super-Dreadnought fleet would be on top o' them an' not a German ship would escape unless she hauled down her flag."

"I can see that," said the boy, "but suppose the Germans do break through!"

"I don't see that it'll do 'em a bit o' good," said the skipper. "I asked the commander the same question. Suppose the fleet got through at the first dash, losing only five ships, say—they'd lose that much, anyway—then twelve German ships would be hikin' down the English Channel at a speed of not more'n 20 knots, an' probably a good deal less, so as to keep the ships o' the

various classes together. Meantime, the five Cats could chase them at a speed of 28 knots, an' since, at most, the Germans couldn't have been above 200 miles ahead when they started, the big Battle-Cruisers would be only 150 miles behind when the Germans reached the Straits. As the English Channel is 400 miles long, an' the Cats would be overhauling at eight knots, they'd catch the Germans before they got out to open ocean, and havin' both speed an' heavier guns could hold 'em in action for the Super-Dreadnoughts, which would be coming up astern at 25 knots. Out on the ocean, the Germans couldn't run away from ships faster'n themselves, an' the Cats would be wirelessing the direction to Jellicoe. Then the big fellows would come up an' pulverize the Germans."

"But you've forgotten one thing, Father," corrected Jed.

"What's that?"

"If the German fleet were 200 miles ahead it would be out of sight an' the Battle Cruisers wouldn't know where they were."

"I reckon it's you that's doin' the forgettin', son," retorted the skipper. "What do you suppose scoutin' aeroplanes are for? Scouts in the

sky would be wirelessin' back every change o' course to the pursuin' fleet."

"But if a fog came up?"

"A fog that lasted several days would help 'em," the skipper agreed, "but they couldn't use it to creep back into any friendly port, an' when the fog lifted, aeroplanes a mile or two up in the air would spot 'em like an eagle does his prey.

"No, Jed, boy, the biggest naval battle o' the war is already won, without firin' a shot. War at Sea is a good deal like war anywhere else, I reckon. There's just four things, numbers, morale, organization an' surprise, or the knack o' bein' in a position to hit first. England's always had the first two, when it comes to navy business, it's 'even Stephen' in the third, but England got a good heft on the fourth by bein' ready forty-eight hours before the declarin' o' war.

"Take it from me, Jed, no matter what happens on land, at sea Germany is licked. I'm willin' to bet that the Kaiser's fleet won't ever come right out to take its medicine. The longer it waits, too, the worse it'll be, for England'll have her new 15-inch gun monsters in commission an' then Germany won't have any more chance than a snow cat on a red-hot stove."

"Then I won't see any fighting at all!" cried Jed, in a disappointed tone.

The skipper looked at his son with a grim half-smile.

"Yesterday you were blown up with a mine, all night you were adrift with nothin' to eat or drink, to-day you have a chance to watch a German mine-layer bein' shelled an' sent to the bottom, an' still you're pinin' for more excitement. What do you want, boy? A Battleship action every ten minutes?"

"I would like to see the heavy-weights mix it," Jed admitted longingly, "though I suppose there isn't a chance. It isn't as if I were in the navy," he added.

"If you were," retorted his father "you'd have to go to school a while, an' likely the war would be over before you ever got afloat."

"I was wondering about that, Father," said the boy. "Just what are we going to do, now the *Puritan's* gone down?"

"Want to go back to the States?" the skipper queried.

"No," the boy replied bluntly, "I don't. I want to get even for the old *Puritan.*"

"Pretty much the way I feel," his father ad-

mitted. "But, after all, son, the *Königin Luise* has paid the piper."

"I know. But I didn't sink her, myself."

A smile twinkled in the skipper's eyes.

"I see," he said gravely, "you want to sink a first-class Battleship, all by your little lonesome, eh?"

The lad flushed as he saw his father was laughing at him.

"No, Jed," the skipper continued, "that's out of our class. It takes a good many years to make a navy man, an' in war-time, sure, they can't have any half-baked stuff around. But I've been thinkin', too. Do you mind that old derelict of a trawler that your Uncle Amos has lyin' up?"

"The *Rosabelle*?"

"Yes. I'm goin' to see if I can take her out an' do a little mine-sweepin'."

"What's mine-sweeping, Father?"

"Sweepin' up submarine mines," was the answer. "It's a simple enough dodge. Two trawlers go out, trailin' between 'em a weighted wire cable, the trawlers steamin' about 100 fathom apart.

"When the draggin' cable fouls the anchor chain of a mine, it either breaks the chain or pulls

up the anchor. Either way, the mine comes to the surface. Then you take a rifle an' pot at it. If you hit one o' the horns, the mine explodes without hurtin' anything. If you don't hit a horn, you go on plugging holes in the shell till the mine fills up with water an' sinks. You get rid of it, either way."

"And suppose the mine-sweeper hits the mine?"

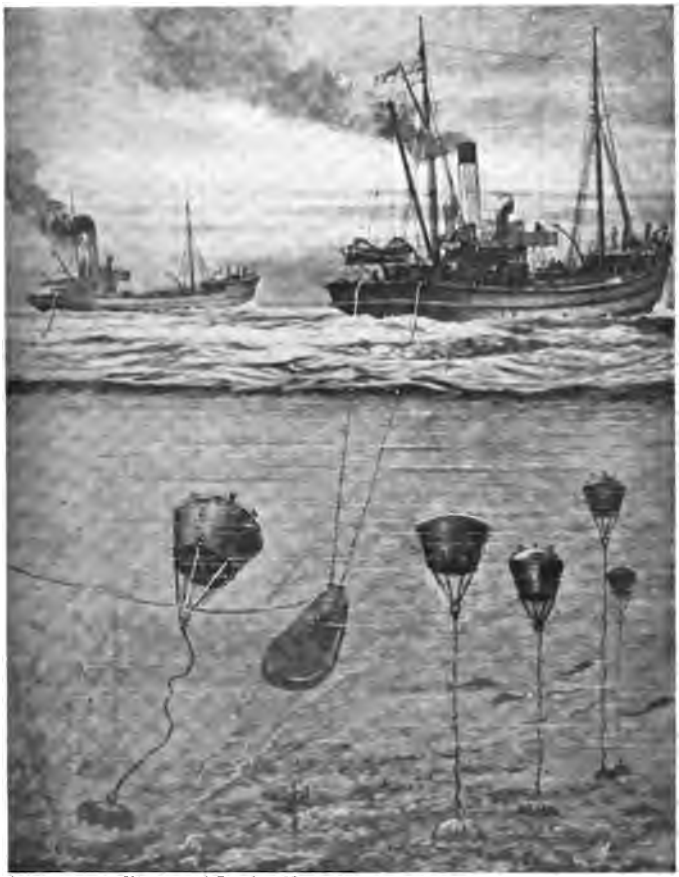
"Then it's a case of Good-by, Sweeper!" replied the skipper, laconically.

"And could I go with you?"

"We'll see," was the guarded reply. And more the skipper would not say.

The rest of the day Jed spent in the fascinating study of the *Lance,* so far as he was allowed to roam, putting questions to every one he thought would answer them, and finally landing on the coxswain, a post which on a Destroyer is almost as important as the Commander—at least, in the eyes of the coxswain. That worthy tar proceeded to answer Jed's questions with a jumble of fact and fancy delivered in a strong Yorkshire dialect and with the solemnity of a judge.

Jed was born with a frame of spun steel, and years at sea had hardened it, but no human being could go through the excitement and exhaustion



*Courtesy of "Illustrated London News."*

HOW MINE-SWEEPING IS DONE.

Diagrammatic representation, showing the trawlers dragging a cable. Towards the close of the war the work became even more dangerous, for the Germans sowed two groups of mines, the deeper one for battle-ships, others, just below the surface, to blow up trawlers who came to sweep the mine-fields. The pattern of mine shown belongs to the early period of the war, later types were spherical.

that had been the boy's fate for the preceding thirty-six hours, without paying the penalty. A reaction set in, and before evening fell, Jed was asleep, squeamish from the Destroyer's intolerable rolling and from the vibration and the smell of oil.

Morning, however, found him awake bright and early, and hearing "four bells" strike, he went on deck. He sauntered forward, and noted on the bridge his friend the sub-lieutenant, chatting with the Commander, who even at that early hour, was at his post. As before, the *Amphion* led the line and the *Lark* was just ahead of the *Lance.*

The morning was fine and bore no hint of disaster.

Suddenly, as though a gray-white ghost had risen from the sea, a column of water, smoke and spray rose at the flagship's bow. The jar of the contact was distinctly visible, and, simultaneously, a sheet of vivid golden flame shot with emerald leaped out of the ghost-gray column. The water sank with a whitening splash, and, with it, the golden flame died down, but the wicked greenish flame flickered over the *Amphion's* fore-deck, hiding it from view. The sea-quake tremor of a mighty explosion shook the *Lance,* a quarter of

a mile away, almost as though she herself had struck.

"Great Scott," Jed heard the Commander say, "she's up on a mine! Starboard! Hard-a-starboard, Quartermaster!"

He leaped to the engine-room telegraph and rang to reduce speed.

"Every soul in the ship," writes an actual spectator,[1] "came bundling on deck to see what had happened, and when the *Lance* had slowed slightly to port, we could see that the *Amphion* was in a bad way. Her fore-part, due no doubt to the ignition and explosion of some of the contents of the foremost magazines, was blazing furiously, and as she was still moving slowly ahead, the flames fanned by the breeze, were licking all round the bridge and foremost funnel.

"The fire was now an ominous orange-red, which showed that the woodwork was burning. She was also settling down by the head, and the bow portion of the ship, which seemed to be detached from the rest of the hull, her back being broken, sloped down at an unnatural angle into the water."

[1] Midshipman "David Munro" (an assumed name) in "The Sub," by "Taffrail," the pen-name of a British naval officer. (Geo. H. Doran Co.)

Yet the speed of the *Amphion* continued undiminished. What had happened was that when the good ship struck that floating canister of hate, everything upon her bridge was turned into a twisted tangle of brass. The telegraph and voice pipes writhed into a contorted semblance of the head and knotted coils of a wounded snake, and Captain Fox was hurled insensible from the bridge. The near approach of the flames seemed to bring him to consciousness and he staggered to the wreck of the ladder leading down to the engine-room and shouted orders to stop the engines.

Many of the Black Gang had been wounded by the explosion, three or four roasted to death in the first couple of minutes by the burning of the oil fuel, but not a man had left his post. Scorched with heat, burned with boiling oil and scalded with escaping steam, they continued their work until they received orders to stop.

Captain Fox, though hurt, gathered his men and sent some of the survivors into that blazing horror of the forecastle, to try and rescue their shipmates. As the *Lance* drew nearer, Jed saw a line of injured and mutilated men hobbling aft with their arms around the necks of their friends. Many,

a great many, had to be carried. The boats were then lowered and the wounded placed in them.

"This was done," said the onlooker, previously quoted, "without the least sign of undue haste or confusion, the uninjured passing the injured down and then falling in on deck and waiting for further orders. They went about their work exactly as if they were carrying out a practice evolution, and it made me proud to watch them."

By now the boats of the Destroyers were out, both the *Lance's* whalers being in the water, and, though the sea was running choppily, sixteen officers and 135 men were rescued, many badly burnt and others injured. One officer, 113 men, and 20 German prisoners previously taken from the *Königin Luise* were lost, most of them killed by the first explosion at the bow.

The captain had just left on the last boat and the whalers had not yet reached the destroyers, when the *Amphion,* rolling blindly, blundered into another mine, evidently a part of the same minefield. This mine exploded the flagship's powder magazine and blew the vessel to pieces. A 4-inch gun, with its entire mounting, was blown high into the air, falling into the sea more than 100 yards away, narrowly escaping one of the whalers,

which only just escaped being swamped. The air was full of flying pieces of steel.

One of the *Lance's* boats had just been swung inboard when Jed, watching the other, saw in the air overhead some falling objects which he dimly recognized as shells, evidently part of the *Amphion's* ammunition.

As the thought took form, a purple flash enveloped him and he saw, as in a dream, the bursting of the shell and three men fall, one of them a German prisoner who had been taken from the *Königin Luise* to the *Amphion* and who had escaped two disasters, only to be killed at the moment when safety was assured.

Then Jed realized that the purple flame was in his eyes, and with that realization came a sudden shooting pain, a burning agony. He tried to put out a hand to steady himself, but the arm would not move. He groped wildly and fell prone on the deck, as the *Amphion* quietly sank beneath the waters.

From her bed in the North Sea ooze the *Königin Luise* had revenged herself.

## CHAPTER V

### THE DRIFTING ZEPP

JED's injuries proved not to be serious. He had suffered only a flesh-wound in the shoulder from the splinter of shell, but the vacuum caused by the shell-burst had stunned him badly and had given him a form of deafness which was accompanied by a loud ringing in his ears which was nerve-racking in the extreme. At the hospital in the port to which the *Lance* had proceeded, the boy was treated for a minor form of shell-shock, and when he was able to travel, a couple of weeks later, he was sent to his uncle's house in Hartlepool to convalesce.

In spite of his youth and hardy constitution, more than a month passed by before Jed felt himself strong enough again to go out on the streets of the busy little seaport town. The *Rosabelle,* he had heard, had been brought up from her old moorings, and, since every shipyard in the place was busy on Admiralty orders, Jabed Wille was

hard at work tinkering up the ancient trawler at some hole-and-corner repair shop at the far end of West Hartlepool.

One afternoon in October, while strolling down the water-front not far from his uncle's house, who should Jed meet but Simmons, his shipmate on the *Puritan* and co-partner of that terrible night in the open boat.

"Simmons!" the boy cried delightedly. "It's never you?"

The old fisherman looked at him, a little abashed at this first meeting with Jed since the days of the sick bay aboard of the Destroyer.

"Aye, my lad," he said, "it be I."

"And how are you? All right again, eh? That's fine!"

"There's nowt much wrong wi' me now," the other agreed, "just a bit shook up, like."

"No wonder! Why, when I saw you last on the *Lance,* they weren't sure whether you were ever going to come around, or not."

"Some on us takes a lot o' killin'," declared the old salt, oracularly, "though, from what the skipper told me when I was in hospital, I must ha' been pretty well out o' my head."

"I should say you were!"

"Mutiny an' all that?" queried Simmons, a little unsteadily.

The boy grinned.

"I don't know much about sea-law, so far as mutiny goes," he answered, "but you sure qualified for the whole dose."

Simmons' mahogany-colored face set hard, but he answered firmly:

"If Cap'n Wille wants to bring me into court for—"

Jed interrupted him promptly, seeing that the old man was seriously anxious.

"Don't get scared, Simmons," he said, "I was just ragging you. Father was talking about you, only the other day, and he was saying that he thought a whole lot more of you for acting the way you did. He hasn't much use for a man who can't stick up for his own opinions. Have you seen him around, lately?"

"So that's how the wind lies, is it?" exclaimed the old sailor, evidently much relieved. "Thank you, my lad, for tellin' me. As for seein' the skipper, why, I did sight him the other day, but I dropped into a pub so as he wouldn't hail me. I didn't know just how he might be headin' on that mutiny business.

"I ain't only been here a few days. As soon as I got out o' sick bay, I went to see my brother Micah. He was in hospital, too. He got blowed up in the *Cressy,* or, leastways, he got hurt helpin' a chap into one o' the boats after she was blown up."

"Was he on the *Cressy?*" exclaimed the boy excitedly. "Oh, tell me all about it, Simmons. I heard some of the chaps on the wharf talking about it the other day, but there hasn't been much in the papers."

"Not likely to be," the old man answered. "That's the sort o' happenin' that the newspapers likes to keep dark. The Huns gave it to us that time, good an' proper."

"How? Was it such a hard fight?"

"It wasn't no fight at all. Our fellows never had a chance. It was a bloomin' game o' ninepins."

"How's that?" asked Jed.

"Tin fish," the sailor replied, laconically.

"You mean—torpedoes?"

"Aye."

"But somebody must have sent off the torpedoes. There must have been some kind of a fight?"

"Wa'n't any chance for a fight, as I told ye," the old fisherman answered, "it was one o' them under-sea boats, as the Huns calls 'em, that did it."

"Honest, was it?" inquired the lad excitedly. "Then the submarine really works, eh? And your brother saw one? Tell me about it, what it looked like and how it fought, and everything."

"There ain't much to tell about a submarine," came the reply. "Leastways, all that Micah said he could see was a thing like two bits o' gas-pipe with knobs on the end stickin' up out of the water. Bein' a seaman gunner, he knew it was a periscope, all right. But that was after the *Aboukir* had been hit an' was goin' down."

"When did it all happen?"

"Jest a week ago last Toosday," the old man answered, "the twenty-second o' September, that would be, aye! Right early in the mornin' it was, too, before breakfast; sky clear, light breeze an' no sea. 'Round about twenty-five after six in the mornin', Micah, chancin' to be lookin' ahead at the *Aboukir*, steamin' slowly half a mile away, suddenly saw her blow up with a big cloud o' smoke an' steam an' a flash o' fire.

" 'Her b'iler's bust!' he says to his pal.

"'B'iler nothin'!' his pal answered, so he says, 'she's bunted into a mine.'

"Bugles blew on the *Cressy* an' the boats' crews were piped. The bridge, seemin'ly, thought it was a mine, too. As soon as the *Cressy* got near enough, an' took up position, all her boats were sent away, even the picket boat bein' hoisted out, though there hadn't been time to get her steam up.

"Micah, he was in one o' the cutters, an' helped pull the chaps who were strugglin' in the ditch into the boat. They'd just taken into the cutter all that she'd hold an' were pullin' back to the *Cressy,* easy like, for she was loaded down till her gunwales nearly lapped the water, when, about half-way back to their ship, the midshipman in charge o' the boat cried suddenly:

"'My aunt! They're moldies!' (torpedoes).

"But his words were sort o' blotted out by a loud roar an' the *Hogue,* only a couple of score o' fathom away from where Micah was pullin' in the cutter, burst in two with a bang. Her stern had been hit, an' afterwards the boys off her said that the 9.2-inch magazine had been blown up. She didn't go right down, like the *Aboukir,* but heeled over an' then hung with a heavy list to starboard.

"It looked like the gun-crews aboard the *Cressy* had seen something, for they were firin' like mad, though a bit wild. It was Micah who first spotted Fritz from the cutter.

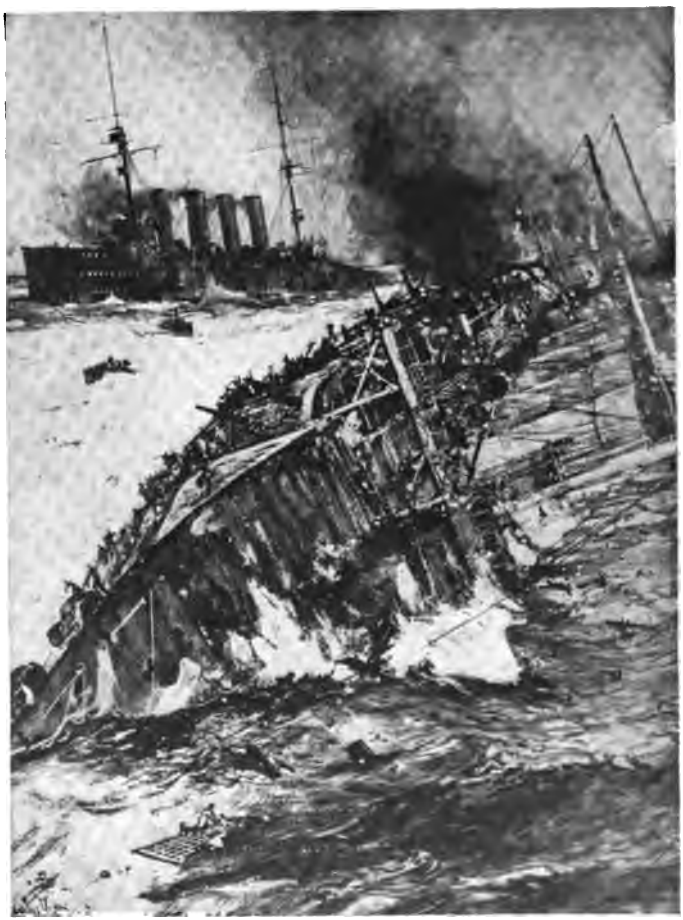
" 'Beggin' your pardon, sir,' he said to the officer o' the boat, 'but ain't that a periscope to port?'

"He pointed with one hand, the other keeping the stroke of the oar.

" 'Right you are,' said the snotty, 'periscope it is!'

"But they wasn't the only ones to see it, for, jest at the same minute, the *Cressy* redoubled her fire, takin' care not to hit the boats, which were scattered all over the shop. You see, the *Hogue's* boats, which had got into the water to go an' help the survivors o' the *Aboukir,* seein' their own cruiser hit, were now all headin' for the *Cressy.*

"They weren't never goin' to have no chance o' getting aboard. Realizin' that the *Aboukir* an' the *Hogue* had been hit by moldies fired from a submarine an' not sunk by mines, the skipper o' the *Cressy* found hisself in a pretty bad box. He could ha' steamed away, o' course, an' cleared out, but that ain't a Navy man's sort. There was



*Courtesy of "The Graphic."*

WHERE THREE GREAT SHIPS WENT DOWN.

The sinking of the British Cruiser *Aboukir*, torpedoed from a German submarine. The sketch was taken from a sister ship at the moment that the Captain, still on the bridge, gave the final order: "If any man wishes to leave the side of the ship, he may do so. Every man for himself!" The *Cressy* and the *Hogue*, sister cruisers, supposing that the *Aboukir* had struck a mine, drew near to save the survivors. First one and then the other were topedoed. Over a thousand lives were lost.

all the boats in the water full o' poor fellows from the wreck, some o' them wounded, to say nothin' o' the chaps swimmin' or hangin' on to life-belts, rafts, mess-room stools, an' the like, which had been chucked overboard a-purpose just after the explosion. The *Cressy* couldn't ha' sheered off. She just had to stay by an' try to pick the men up."

"I don't see that steaming away would have helped her any," put in Jed. "The submarine could have followed, couldn't she?"

The old sailor shook his head.

"Not a bit of it," he answered. "A submarine ain't got no speed to speak of when she's submerged, leastways, nothin' that'd catch a cruiser. Besides, a sub has to go it blind, an' if a vessel changes her course—which she always does, zigzag fashion, when dodgin' torpedoes—it puzzles a sub an' puts it out most tremendous. And then, if it does pop up to have a look around an' find out where the chase has gone, why, one of the guns 'll land a shell in its innards, an' it's Good-by, Fritz!"

"And couldn't the *Cressy* dodge that way?" asked the boy.

"She did, o' course, but seein' that she couldn't

leave all hands in the water, not by a long chalk, she sort o' zig-zagged in circles, hopin' for the chance of another pot-shot at the sub, because, if she didn't get it, more'n likely, it'd get her.

"Right as rain," he continued, "up comes Fritz, not once but twice, 'porpoisin' ' as they call it, or goin' ahead in a wavy up-an'-down fashion, like a porpoise does when he rolls out o' the water an' in again. The gunners o' the *Cressy* fair smothered it with shells, so it looked from the cutter, Micah said, but the odds was with Fritz that day an' none o' the shells seemed actually to hit, worse luck. As for Fritz, he was just gettin' his bearin's and layin' for the *Cressy*. Meantime, the *Hogue* had followed the *Aboukir* an' gone to the bottom, takin' a many good men with her.

"Then the periscope was sighted runnin' along less 'n a hundred fathom away from the starboard quarter o' the *Cressy* an' it disappeared right after. A few seconds later, Fritz let go a moldy. There's no denyin' that it was good shootin', for the torpedo hit the *Cressy* amidships. Another one was fired, almost at the same time, passin' so close under the cruiser's stern that it almost touched the propellers.

"The first one was enough to do the trick. The *Cressy* listed about ten degrees to starboard, tiltin' up her port guns so that they were put out o' business. The gun crews stood by 'em to the last, though. About a quarter of an hour later, Fritz came up close, havin' no fear o' shells with the gun muzzles pointin' to the sky, an' sent in a third torpedo, which hit under the boiler room an' the boilers blew up. The *Cressy* then heeled over in a hurry an' turned turtle. She floated keel up for a while, finally goin' down just afore eight o'clock.

"There was a Dutch trawler in the offing, an' the *Hogue* had signaled to her to close in an' save life. A lot she cared! Dutch bunks with Dutch, that's what I say, an' Hollander an' Hun have always been chummy-like. Anyhow, so Micah tells me, the Dutchman kep' on her course, like as she'd seen nothin'.

"Luckily, though, the big steam pinnace and picket boat o' the *Hogue* had been got afloat before she sank, an' a lot o' the men were picked up by the cutters an' put into them. By an' by a couple o' Dutch steamers, the *Flora* an' the *Titan,* answered the *Cressy's* S O S signals an' took the men aboard out o' the open boats until the *Lucifer*

came racin' up, when they were trans-shipped an' taken ashore."

"And where's your brother going now?" asked Jed.

"Why, as to that, he's a bit down in the mouth," the old sailor replied. "He had hoped to get on one of the new Q. E.'s, 'cause he's a pretty boxer an' an all-round sport, is Micah, an', on a small ship, he don't often find any one who can make it interestin' for him. What's more, now that the war's on, being a Seaman Gunner, First Class, he wanted to get on one o' the new boats. But he's transferred to the *Invincible.* After all, while she ain't a Q. E. or even one o' the 'Cats,' she's a seventeen-thousand tonner an' carries 12-inch guns."

"They ought to be big enough, in all conscience," remarked Jed, remembering the fearful explosions he had witnessed on the *Königin Luise* as a result of the 4-inch shells of the *Lark.*

"Aye, they're big," agreed Simmons, "but Micah was just breakin' his neck with hopin' to get a chance at the 15-inch guns of a Q. E. or, leastways, the 13.5's of a Cat. As you say, though, the 12-inch guns are something. They're away ahead of the two poky 9.2-inch crackers o' the *Cressy,*

special since those were an old type. Of course, Micah bragged hisself blind about 'em, so long as they were his guns, crews are always that way, but they didn't really amount to much. Don't forget, Jed, that while Fritz nabbed those three cruisers all on the same day, they were pretty near the oldest an' footiest ships we've got in commission."

"Right glad to hear it," declared Jed. "Of course, I'm an American, and I suppose I oughtn't to take sides. Just the same, it was German mines which sank the *Puritan,* and, besides, a chap can't help reading in the papers what's going on in Belgium."

"I'm a-goin' to do my bit against 'em," asserted Simmons, sternly. "I ain't likely to forget them two little Dutch kids, in an open boat, lashed to a mine which would blow them an' any ship which came to rescue 'em to Kingdom Come. It's goin' to take a lot o' drowned Germans before I get even for that dirty trick."

"But how?" queried the boy. "What are you going to do?"

"I'm goin' mine-sweepin'," the sailor answered, "on the *Rosabelle,* if the skipper'll take me, if not, on some other trawler. They're needin' men

who know the coast, an', though I ain't even got mate's papers, when it comes to workin' a craft without lights jest by the feel o' the coast, there ain't many that can lay it over me. I can work a tide in any harbor on this side or t' other like I was navigatin' my own front garden patch afore my little house up the street."

"Oh, Father will take you on the *Rosabelle,* I'm sure of that," affirmed Jed confidently. "If you like, I'll ask him when he comes home to-night."

"Don't ye go now to do it," answered Simmons, "I'd sooner have it out with him myself, man to man. Is he down at the Hole now?"

"I left him there," the boy replied.

"I'll step down an' see him," declared the sailor, and, with a nod to Jed, he swung off down the street.

Jed's prophecy proved true. Jabed Wille not only was free of any grudge for the old sailor because of his "mutiny" in the open boat, but he was heartily glad to see him again, and promptly offered him a place on the *Rosabelle.* At the same time he entrusted the old man with his plans.

" 'Way down east, in the States, where I hail from," he said to the fisherman, "boys were

brought up strict an' I had it whaled into me, good and plenty, that there's a cargo o' brimstone awaitin' liars. Just the same, I reckon it won't hurt Uncle Sam any if I turn Britisher durin' the war. You get me, Simmons; the skipper o' the *Rosabelle* hails from Hartlepool, same as the ship an' crew."

Simmons shifted the quid in his cheek.

"Very good, sir," he answered, "if that's Cap'n's orders, I'm willin' to swear to it, any time."

On this pleasant and easily arranged basis, the *Rosabelle* and her crew had little difficulty in volunteering for mine-sweeping duty. The Navy was busily engaged in creating the auxiliary fleet which was soon to become an all-important branch of the Royal Navy, but in the first few weeks of the war, before this was definitely organized, a great deal of volunteer mine-sweeping was done. Jed was keenly anxious to be allowed to take part in this work, but his father refused this request sharply.

" 'Tisn't only for your sake," he said, on one of his brief visits home from the not-to-be-mentioned port from which the mine-sweeping was being directed, "it's for ours as well. Those

British Navy men keep a pretty keen watch over us, an' there'd be questions asked if a young shaver like you were aboard. An' if they should get to askin' too many questions, they'd find out I came from the U. S. A., an' the *Rosabelle* would have to stay home an' be good."

The logic was unanswerable, but it failed to comfort Jed when his father returned with tales of hairbreadth escapes from being blown up by German mines or shot to pieces by German mine-sweeper-hunters. These were craft of very shallow draught, which could scoot over a mine-field without danger, but which carried a very efficient twelve-pounder gun.

Occasionally a daring German Destroyer poked her nose out of the safe protection of the Heligoland guns, but the only time that the *Rosabelle* was actually shot at, it was a British Destroyer which did the shooting. In the ensuing apologies, it turned out that a German submarine had been frolicking hither and thither on the North Sea, using, as its "mother ship," a trawler the description of which fitted the renovated *Rosabelle* exactly.

Yet, little though he was aware of it, Jed was to have a more vivid experience with German guns

*Courtesy of "The Graphic."*

**Exploding a Canister of Hate.**

**Crew of a mine-sweeper firing at a submarine mine which has been brought up to the surface. So dangerous is the work that the men live in life-belts.**

even than his father, although the latter was engaged, day in and day out, in the arduous and dangerous work of mine-sweeping.

Just as Jed was getting up from breakfast, one cold winter's morning (Dec. 16, 1914) he heard, distinctly, a distant detonation from seawards.

"If I were on the *Rosabelle,* now," he exclaimed excitedly, "I'd say that was German guns!"

He ran out of the house to investigate. There was a slight mist over the water and nothing was visible out at sea, at least, nothing could be seen on that small strip of ocean visible at the end of the street from the front gate. Half a minute later there came a second dull boom, somewhat muffled by the fog. As to this, however, there was no doubt as to the reality of its being gunfire, for a shell came screaming over, evidently aimed at the obsolete fort, where a couple of old guns were kept, for show rather than for use.

Jed ducked back into the house, coming out, a moment later, with the big ship's telescope belonging to his uncle. He tore at full speed to the water-front.

By the time that he got down to the quay, there was no question as to the actuality of the bombardment. It was no holiday affair. Resting his

glass on a mooring post, Jed could just make out dimly the ghostly gray bulks of the attackers. They were the *Derfflinger, Blücher, Von der Tann, Seydlitz,* and *Graudenz.* Although Jed could distinguish that three were Battle Cruisers and two Light Cruisers, he did not know their names.

Through the fog he could see the yellow flashes of the guns as they fired. So intently was his attention as well as his eye focussed on the telescope that he failed to hear a step behind him. A large hand was laid on his shoulder.

" 'Ere!" said a policeman to him. "You move on! You'll be gettin' yerself shot, else."

"I've been under fire, already," answered Jed proudly, resenting this interruption.

" 'Ave ye now?" queried the policeman, with elaborate sarcasm. "An' which o' the admirals might you be, now? I don't recollect seein' your face in the papers."

"I was on the Destroyer *Lance,* when the *Amphion* sunk the *Königin Luise,*" the boy retorted, "and I saw the *Amphion* blown up by a mine herself, next morning."

Then, realizing that personal considerations rather than argument would enter into the policeman's insistence that he move on, he said, straight-

ening up and handing the long telescope to the blue-coated officer of the law:

"Maybe you'd like to take a look. You can see 'em clearly with this. Wouldn't you want to be the first man on the Force to see them?"

The policeman looked shrewdly at the lad.

"Ah!" he said, with an effort to conceal his curiosity, "it might be my duty, like."

He stooped down and squinted through the glass, while Jed jabbered eagerly from the store of information he had picked up aboard the Destroyer and from Simmons. The policeman looked long and curiously, then, returning to his task of keeping the people from crowding down on the quay, he took the usual little note-book from an inner pocket and made a record of the first appearance of the hostile Cruisers. He seemed to have forgotten the necessity of making Jed move on, as the boy had hoped.

Suddenly there was a sharp report from the shore, and Jed, turning, saw that the forts were beginning to reply. Their guns were old and small, however, and as soon as the Germans realized the ineffectiveness of the fire from the town's defenses, the Cruisers moved closer inshore and commenced an even heavier bombardment.

"The *Doon's* never goin' out!" then exclaimed Jed in a horrified surprise, as he saw the harbor patrol boat, with her consort, the *Hardy,* start out to take position in the harbor, "why, those Cruisers there could just about eat them alive!"

A few shots soon convinced the patrol boats of this fact, and, having drawn the fire of the Cruisers for a few minutes, not more than ten at the most, they scurried away.

One shell fell near Jed, striking a private house near the end of the quay and killing two women who lived there. A small crowd which had been clustered near the corner, though showered with brick dust, scattered, fortunately no one else being hurt. Jed ran forward at once to see if he could help in any way. His friend the policeman was there first.

"Run an' get a doctor, lad," he said, but, just as Jed was starting off a man came hurrying forward. Another shell fell full on the quay and burst with a terrific roar, but the little man who was coming at a half-run took no further heed of it than to pull his hat closer down on his head with an instinctive gesture of protection.

"Is there any one hurt, Officer?" he asked, in a high piping voice, "I'm a doctor."

"I'm afraid there is, sir," answered the policeman, and they entered the wrecked house together.

The shells were now falling thickly, but over a wide range. Within half a mile radius of where the boy stood, a dozen more houses were knocked to pieces, but there were no more fatalities in that neighborhood.

Some of the shells took queer freaks. One, for example, struck the corner of a house at the second story, and blew the whole brick corner away. A little girl of five years old was kneeling on the floor, reaching forward to take her dolly out of her little bed in a doll's house on the nursery floor " 'cause Dolly might be fwightened" as she sobbed out afterwards when the shell struck. The explosion blew doll's house and Dolly into fragments and cut off both hands of the little girl at the wrists as cleanly as if they had been surgically amputated. Otherwise the child was unhurt, not a scratch or a bruise anywhere, though the shell had exploded only a few feet from her. In other parts of the town, children, perhaps further from an actual burst of shell, were killed outright, nine losing their lives in the first half-hour of bombardment, three of them babies in cradles.

Near the center of the town the damage was greater and the loss of life heavy, though far less than would have been expected from the severity of the bombardment. Over 1,500 shells fell in fifty minutes at Hartlepool, 500 shells in Scarborough, 200 shells in Whitby. The total loss of life in all three towns was 120.

The fort at Hartlepool was battered to pieces, but the lighthouse, against which a heavy fire had been directed, did not fall, though a shell passed clear through the structure without exploding. The fires started by the shells were speedily put out by the fire departments of the several towns, and, as the fog began to lift, the German Cruisers fled at full speed, fearing that wireless messages would be hurrying the English vessels on their heels, and they had no desire for a fight.

"Baby-killers!" rang from one end of England to another.

It was not to be denied that the Germans had succeeded in bringing the war to English shores. Although neither Whitby nor Scarborough had the slightest claim to be considered fortified places and therefore the bombardment of the same was an utterly unjustifiable offense, there were forts at Hartlepool and they did return the fire.

No one incident in the whole war more completely emphasized the necessity to Great Britain of a powerful fleet patrolling the North Sea. From that day on, any German vessel which tried to sneak out under cover of moonless night or fog was sure to be sighted and driven back. The line of sentries on the western battle-front did not stop at Nieuport, but ran clear across the North Sea. The Germans tried a raid once more, on Jan. 24, 1915, but they handicapped themselves by bringing the *Blücher*, an old but powerful vessel whose speed was less than that of the rest of the squadron.

This time the British were ready. Air scouts brought word of the coming of the Germans, and the squadron of Cats hurried southward. They opened fire, with the 13.5-inch guns of the *Lion*, at a distance of fourteen miles. The Germans started to run. Then the superior speed of the British Cruisers began to tell, while the Germans stayed behind to help the slow *Blücher*.

By nine o'clock the distance had been cut down to seven miles and hits were frequent. The *Blücher* was crippled and fell behind. The *Lion* passed her and poured a broadside into her. Then the *Tiger* also overhauled the *Blücher* and gave

her a terrific broadside as she passed. The *Princess Royal* singled out the *Derfflinger* for her fire. But, meanwhile, the leading British ship, the *Lion,* had been badly injured by German shells and one of her engines was put out of commission. By this time the *Blücher* was done for and the *Derfflinger* and the *Seydlitz* were on fire.

The crippling of the *Lion* delayed Admiral Beatty and it was not until noon that he was able to transfer his flag first to the Destroyer *Attack* and thence to the *Princess Royal.* Rear Admiral Moore, who took command in Beatty's absence, suddenly ordered all ships to cease firing. The British squadron was within seventy miles of Heligoland, and to go farther would be to run into a trap. Only one of the raiding cruisers was sunk, but it taught the Germans that the English coast could not be approached with impunity.

It was a couple of weeks later that Jed's chance came. He had been fretting over his enforced inaction ashore, when so many exciting affairs were going on afloat, when, one afternoon, a hard-faced old ship-captain with a rolling walk, came up to the house where Jed was standing, his arms on the garden gate.

"Be your name Jed Wille?" he asked.

"Yes," answered the lad, a sudden fear clutching at his heart, for he felt sure that this must be a message that his father had been hurt or drowned. The next words reassured him, however.

"Be you a-wantin' to ship?"

"You bet!" exclaimed Jed eagerly. He swung the gate open. "Won't you come in?"

"No need," answered the other. "Your dad told me you knew something about engines."

"I don't know a great deal," the boy replied, "but I used to knock about the *Puritan's* engine-room a lot."

"I can use an extra hand aboard the *King Stephen,*" said the stranger, "to spell off my assistant engineer whiles an' to stand a watch. Four pound a month."

"What's the *King Stephen* doing?" asked Jed, for his interest lay in the war rather than the job, although he was willing enough to be at work.

"She's mindin' her own business," the hard-faced skipper answered shortly, "an' that's what everybody aboard of her has got to do. I want some one that can keep his mouth shut."

Jed's expression brightened. Evidently there was something behind all this.

"I'll come," he said promptly.

"Report this evening. We're lyin' off Thompson's wharf. Bring some heavy duds in your dunnage. We're out nights, mostly. If you're not aboard by nine o'clock, there's no use coming."

"I'll be there," the boy agreed, "and—"

But the skipper of the *King Stephen* was not interested in any further conversation and had turned his back. He rolled back down the street without another word. Jed looked after him a bit breathlessly.

"He's sure up to something!" was the lad's comment, when the broad back was out of sight, and he went indoors in high glee to prepare for wintry nights on the North Sea.

The *King Stephen* proved to be a simple trawler. She carried no guns and was equipped in every way just as any one of a couple of dozen similar craft before the war. As he stepped into the poky little engine room, however, Jed whistled softly under his breath.

Engines such as those before his eyes were rarely seen on a trawler. They were not particularly shiny or well-kept, but the power was there, and the lad knew enough about engines

to realize that they could develop an enormous speed.

"Pretty good horsepower there, sir," he said to the engineer, after the very few formalities had been transacted by the skipper in less than a dozen words.

"Oo aye," said the Scotch engineer, "ye ken that fouk like their bit fish for breakfast richt early in the mornin', an' a bit speed, noo an' again, comes in weel handy."

From which Jed rightly gathered that he was not likely to get more information from the engineer than he had from the captain. The *King Stephen* did put out her trawl from time to time, but it was easy enough for Jed to see that this was merely a blind. Just what her business actually was, he never asked, though he had a shrewd suspicion. He attended strictly to business, and became well-liked by his Scotch chief, who, finding that the boy was really anxious to learn, put him through a course of engineering which would have done credit to an Institute of Technology.

One morning in the spring, Jed, stepping on deck, saw all hands looking at a huge blob on the water a couple of miles away, bearing a strong resemblance to the blunt head of an immense

worm. All the stories that the boy had read about sea-monsters and the Kraken flashed back into his head.

"That's like the head of a Sea-Serpent, Chief," he said to his friend.

" 'Twould be a puckle sea-sairpint," the Chief answered, "wi' a head mony times bigger than this boat."

"What is it, do you suppose?"

" 'Tis one o' they murderin' Zeppelins," said the engineer. He paused and added: "They're no lichtsome!"

And Jed knew that the cautious-worded engineer was at white heat within.

There was a sharp north-easterly wind blowing that morning, whipping the gray North Sea into the dirty lead-colored foam so characteristic of it, when the *King Stephen* steamed swiftly toward the huge bulk floating on the water. No more unreal phantom had ever showed itself to the eyes of seafaring men.

Vast beyond believing, larger and higher than an ocean liner, its ungainly yellow mass floating awkwardly on the billows, its stern clear of the water and the top high in the air, its forward end already partly waterlogged and crumpled, it

loomed against the gray sky like some gross cosmic worm paralyzed in its death agony, yet jerking and swaying convulsively, none the less. The sinister grace of the monster of the air, seen when floating overhead, was gone. The inert power was there still, from the mere enormousness of its mass, but it was a power malign, ugly and foul.

The engineer put the feeling into words.

"She looks like the Pit ha' tried to do the work o' God!" he said.

It was exactly that. Jed felt, though he could not for the life of him have expressed it, that this faceless enormity writhing on the surface of the sea was an impious horror, as though in blind arrogance and unreason, Man had tried to create Life and this had resulted.

Along its top, seventy-two feet above the sea, were clustered the officers and crew, forty-eight men in all, waving and calling for help. Helpless indeed they were, for though the stern ballonets were filled with gas and floated high, the fabric of the forward end was watersoaked and the weight of the metal frame was dragging her down, slowly indeed, inch by inch, but none the less down. Nor was there a boat nor a piece of wood to be cast overboard to which the survivors might cling.

The *King Stephen* came up to the Zeppelin, her screws revolving slowly. Then she stopped, only a few fathoms away from the wrecked airship.

"We surrender!" shouted one of the German officers, in good English. "Take us aboard."

The skipper left the wheel-house and went for'ard to the bow. Jed noticed that the engineer accompanied him. A look flashed from one stern face to the other.

"I can't receive your surrender," roared the skipper in reply. "This boat is not commissioned in His Majesty's Navy."

"Take us aboard!"

By now the trawler was close enough almost for the men of the Zepp to have jumped into her and the skipper's answer could be heard by every one of the German sailors perched on the skin of the collapsed airship.

"I'm a British seaman," he said, "I've sailed salt water for thirty years an' better, an' I've gone overboard more'n once to save a man from drownin'. But there's nothin' I can do for you."

Some of the men who could understand English translated this to their comrades and a babel of cries broke out on the Zepp:

"Kamerad!"

The officer spoke again.

"By the laws of war," he said, "you are obliged to accept our surrender."

"I have nothin' whatever to do wi' the laws of war," answered the trawler's master.

"I demand in the name of humanity that you take these men on board."

"Who are you," replied the skipper, "to be fillin' your mouth wi' talk o' humanity, wi' your hold full o' bombs to drop on defenseless women an' children?"

"I give my word as an officer and a gentleman," shouted the captain of the Zeppelin, "that we surrender and will go peaceably to any port to which you may be bound."

"On the high seas to-day," answered the skipper "the oath of a German officer isn't worth a handful of oakum. There's nine men aboard us, an' we ain't armed; there's nigh fifty o' your men, armed. Do you fancy I'd trust a crew o' Baby-killers?"

"I swear—" began the officer, but the skipper interrupted him.

"You may swear to the crack o' doom," he said. "Yourselves have made a German oath a thing that stinks like bilge-water. I'll report your con-

dition to the first navy ship I see, an' they can come an' rescue you."

He turned on his heel, entered the wheel-house and rang the telegraph for "Half Speed Astern." The *King Stephen* commenced slowly to back away.

A chorus of cries and curses broke out from the Zepp, but the skipper never even so much as looked backward.

When the Zepp had become a mere blur in the distance the engineer came amidships where Jed was standing.

"There's mony sad an' bitter things to be done in this world, my lad," he said, "an' I'm far fra' blamin' fouk for their ain' troubles, but the man wha breaks his word is a man for whom all other men will have but little use."

And the sinking Zepp faded behind them into the horizon.

## CHAPTER VI

### A HERO OF THE BLACK GANG

THE night was without a moon, wet and wild. The *King Stephen* pitched and rolled without ceasing. A living gale was blowing and the yeasty-frothed combers smashed savagely down on the trawler's deck. It had been blowing thus for two days, during all which time the hatches had been closed. In the engine-room, the stuffiness and the smell of hot oil-soaked iron was intolerable. If Jed had not been bred to the sea, he could not have stood it. Moreover, in spite of the night, the *King Stephen* was tearing ahead at full speed, her propellers every now and again being thrown out of the water, sending the engines racing as though they would tear themselves from their beds.

"It must be the horn of a job keeping up steam a night like this," commented the boy, as he watched the engineer stuff his pipe full of the strongest-smelling tobacco that the lad had ever

smelt. "I sometimes wonder how those chaps in the boiler-room keep from falling into their own fires."

"Whiles this is no' sae bad," the Scotchman declared, "an' there's ae man aboard here that could keep steam goin' if we were drivin' along upside down."

"You mean Morgan?"

"Oo aye. Ye'd oughter ask him about firin'! He was on the old *Kent* when she was playin' hidie hole around Cape Horn. Ye'll have noticed Morgan?"

"I saw he had only one hand," replied the boy, "or, rather that one of his hands is an artificial one, but I never liked to ask him why. It might seem meddlesome."

The engineer smiled, a slow, cautious smile.

"Belike. 'Tis a gude craft, this, for teachin' a lad not to be too inqueesitive."

"It certainly is that," agreed Jed. "There's heap of things aboard I'd like to ask questions about—that submarine detector, for example."

"Nae doot, nae doot o' it at all," the Scotchman replied, "but I've nae complaint to mak' o' your imprudence."

"The skipper suggested it wouldn't be healthy,

the very first time I met him," returned the boy.

"He has his reasons, an' ye'll have obsairved that he doesna' talk much himsel'."

"Nor does any one else aboard, so far as I can see."

"Belike we hae oor reasons, too. But there's nae reason why ye shouldn't know aboot Morgan. He lost his hand in the battle o' the Falkland Islands, pickin' up a blazin' fuse, after a shell-burst. He micht tell ye the yarn. He has a medal, has Morgan, an' from what little I've heard, he richly desairved it."

"You tell me about it?" begged Jed.

"I'll do better than that," he said, "I'll hae the man tell ye himsel'. He's off watch, now."

He raised his voice.

"Morgan!" he called.

"Sir?" answered the stoker, stepping forward at once, with the alertness characteristic of a navy man.

"The lad here is spierin' about the *Kent*. Tell him how ye made the Hun swallow his own duff at the Falklands."

The stoker looked at the lad pleasantly and smiled.

"He knows more about it than I do, sir," he

said. "I heard him explainin' it, only the other day."

The engineer looked at Jed in surprise and the boy colored up to the roots of his hair.

"Father's been interested in naval battles ever since we saw the *Königin Luise* sunk and the *Amphion* blown up," he explained, "and the last time we happened to be home at the same time, he was trying to show it to me. But, of course, I don't know how much of it I've got right."

"It's little I know of it," declared the stoker, "there's not much to be seen from the boiler room."

"But surely you'd know something about the fight if you were there!" cried Jed, disappointed at the implication that he was not going to hear the story.

"An' what would I be likely to know? The holds made for machinery are 'way down at the bottom o' deep shafts, below the water line, an' the boilers are under that. When a battle's goin' on, there's no runnin' up on deck to take a look. We're workin' stripped to the waist, shovelin' coal; workin' to bust, till the veins in your head seem to crack wi' the strain an' the heat. It's our business to keep the fires goin' an' to make

steam so that the engines can be kep' at their top speed."

"But don't you see or hear anything?"

"See? No! We hear enough. We can hear the shells crashin' agin' the sides o' the ship or shriekin' overhead. We can hear an' feel our own guns, goin' off. We can think—if we have time, which isn't often—that any minute or second a torpedo may drive into us or a shell crash down into the innards o' the ship an' set us on fire, if it doesn't send us down. But that's about all we know.

"It's the men in the bowels o' the ship that have the work, lad. There may be only an hour's shootin' for a ten-hour chase, but, on a coal-burnin' craft, it's not the ship that's doin' the chasin', it's the muscles o' the Black Gang. Ye can talk all ye like about the horsepower o' engines, but their horsepower would be worth just nothin' if it weren't for the wheelbarrows an' shovels down below. When ye read in the papers that one ship overhauls another o' equal speed, don't forget that it was the sweat o' men what done it.

"An' if we do get hit an' hit sudden, there's mighty little chance for the Black Gang to escape. We stay below until all hands are called to abandon

ship, an' that's never till the last minute. When a ship turns turtle, it's the boys below who are trapped.

"Don't think I'm complainin', lad. It isn't any harder on us, in a way, than the rest o' the crew. Men at gun-stations, fire-stations, an' the like are a sight sooner to be hit wi' shell splinters than we are. Put it this way. There's fewer o' the Black Gang wounded by shell splinters in a battle, but there's a sight more scalded, burned, or drowned. But we know that's all in a day's work, an' we do it, an', the way I see it, we get a deal more fightin' than the sailors do. There's many a gun crew that's never fired a shot, but there's nary a man of a Black Gang who hasn't steamed his ship into action or out of it. An', even if it's only patrollin', it's our arms behind the engines that does the trick."

The engineer nodded, approvingly.

"There's naething in this world like thinkin' your ain job is just a wee bit better than any one else's," he said with a smile.

"But isn't it true, sir?" demanded the stoker.

"Oo aye, it's true enough. An' there's nae doot that ye showed on the *Kent* what can be done with old boilers. No one will ever be denyin' that.

'The indomitable perseverance o' the engine-rooms an' the boiler rooms o' the *Kent,*' wasn't that how the official dispatch ran?"

"Something like that, sir. But we had to do it!"

"Why?" asked Jed.

"When the Huns sunk the *Monmouth* an' the *Good Hope* off Coronel," the stoker answered, "they never put a boat into the water to try an' save our fellows who were freezin' to death in that icy sea. The *Monmouth* was a sister ship to us an' was manned by naval reservists. Two of our lower deck had brothers aboard, an' most of us had chums or former shipmates. That was why we asked for the chance, to tackle the *Nürnberg* alone, an' got it. But you know the Coronel story."

"Not any too well," replied Jed.

"For my ain part," put in the engineer, "I've never heard the richts o' it. You, Jed, have been readin' about the ficht in the papers, an' Morgan here, was in the second ficht wi' the same ships. I've naethin' better to do the nicht than to sit here an' listen to my engines runnin' smooth. But I'll be right willin' to hear ye tell the tale, Jed, an' if ye gae wrong, Morgan will set ye straight."

"I'll do that if I can," said the stoker, "an' I'd like, myself, to hear the lad tell about it. There's a many things I've never got quite right about it, an' maybe the lad will know."

"That suits me," agreed Jed.

He looked at the engineer, and receiving a nod bidding him to proceed, began.

"The way Father told it to me," he said, "he began right at the very start of the war, just about the time the *Puritan* was sunk by a mine. When war broke out, there were three German warships in the Pacific. First of all, there was the Protected Cruiser *Emden* at Tsing-Tao, a German naval base in China. There were the Armored Cruisers *Scharnhorst* and *Gneisenau* at the German Caroline Islands. Off the Pacific coast of Mexico the Germans had the Light Cruisers *Leipzig* and *Nürnberg*. The only ships she had in the Atlantic were the *Dresden* and the *Karlsrühe* on the West Indies station. Is that right?"

"There was one more," the engineer put in, "the *Strassburg*, but she slipped away an' got back to Germany, the day that war opened."

"Now, on the English side," the boy continued, "there was a bunch of the old county cruisers

*Courtesy of "The Sketch."*

**He Went Down with the Ship.**

**"Bruce," the Irish terrier of the Captain of the British battleship *Formidable*, who refused to leave his master when the vessel was torpedoed, and stayed on the bridge to the last.**

led by the *Suffolk* and including the Light Cruiser *Bristol* stationed at the West Indies, covering the Gulf of Mexico and as far north as the Bermudas. The only British warship in the South Atlantic was the *Glasgow*. On the Pacific side, the Australian Unit was looking after the South Seas and the Japanese fleet was keeping watch over the China Seas.

"When the fun started, the *Emden* cleared out from Tsing-Tao, and had a wild time before she was caught. The Australian Unit chased the *Scharnhorst* and *Gneisenau* as far as Fiji, when the only Battle Cruiser in the lot, the *Australia,* was called back to England, and the smaller Australian Light Crusers were compelled to give up the chase. The *Dresden* and the *Karslrühe* cleared out from the West Indies, the *Karlsrühe* crossing the South Atlantic towards the African coast and the *Dresden* striking southwards off Brazil."

The stoker looked at Jed in surprise.

"You've done quite a bit o' figurin'," he said, "to get that all straight."

"Father and I worked it out on charts at home," Jed explained. "But I'm a little puzzled as to

how the English ships got all changed around. Where did the *Monmouth* and the *Good Hope* come from?"

"I can help you there," said the fireman, " 'cause I had a chum on the *Monmouth*. They started right out from England to meet Cradock, who changed his flag from the *Suffolk* to the *Good Hope*. The *Monmouth* went south to meet the *Glasgow*. That was the beginning o' the squadron which got into the Coronel mix-up."

"And how did your squadron get together?" asked Jed.

"From about all over," replied the fireman, "the *Kent* come straight out from England. The *Carnarvon*, with Admiral Stoddart's flag, was in St. Vincent, on Cape Verde; the *Cornwall* came from the West African coast; the *Defence*—the best o' the lot—came from the Mediterranean. The *Bristol* had stayed behind tryin' to find the *Karlsrühe*. The *Suffolk*, *Essex*, *Lancaster* and *Berwick* went northwards near Halifax. All I know is, that by September we had the *Carnarvon*, *Defence*, *Cornwall*, *Kent*, *Bristol* and the armed liner *Macedonia*. The old *Canopus*, a powerful Battleship with 12-inch guns was on her way, but she could only crawl at about thirteen knots."

"And by that time," joined in Jed, "Admiral Cradock had left the old county cruiser *Suffolk* and had joined his new flagship the *Good Hope* sent out to him from England, and had gone south to join the *Glasgow, Monmouth* and the armed liner *Otranto,* trying to head off any trouble which might be started by the Germans in the *Dresden* or the *Karlsrühe.*

"Now," the boy continued, "if I've got the idea right, while Cradock was looking for the *Dresden,* making his base at the Falkland Islands, the Hun Cruiser was slipping to the south. Then, quite suddenly, there came a wireless message from a passing steamer that she had sighted the *Dresden,* with two colliers accompanying her, on the other side of Cape Horn, showing that the Cruiser was making for some point in the Pacific. A day or two later came wireless news that the *Scharnhorst* and the *Gneisenau* had bombarded Tahiti in the Society Islands, and that the *Leipzig* and the *Nürnberg* were steaming south from the coast of Mexico. That made a strong German squadron all heading from different directions towards Easter Island in the South Pacific.

"Cradock started after them hot foot, but because the old *Canopus* could only steam thirteen

or fourteen knots, she got left behind further and further every hour. By the time that Cradock had got through the Straits of Magellan, the *Canopus* was away in the rear, so far that she never got within sound of the battle at all. Anyhow, Cradock thought it was his business to get up and tackle the *Dresden* before she made connections with the *Leipzig* and *Nürnberg*. What I don't understand, though, is how Cradock, with nothing heavier than his 6-inch guns, on slow ships, could expect to win from the 8.2-inch German guns on two of their crack ships."

"He didn't," came the stoker's immediate reply, "he never expected to find the big cruisers there. One o' the quartermasters o' the *Glasgow* who was at the wheel, told me he heard the navigating lieutenant say, when he saw the four funnels of the *Scharnhorst* and the *Gneisenau* in the distance, 'There'll be the very pickle to pay, now!' "

"And I suppose they couldn't very well run away, having been seen by the Germans."

"They could have got back to the shelter of the old *Canopus*," said the stoker, "an' I'm not sayin' but what it might ha' been better if they had. The 12-inch guns of the *Canopus* could have

kept the Germans away. But that wouldn't have been cricket."

"You mean," said Jed, to whom this idiom was new, "that Cradock's business was to fight Germans, not run away from them."

"Aye," agreed the stoker, "just that."

"So far as I can make out," continued the boy, "it was the power and the speed of the *Scharnhorst* and the *Gneisenau* which worked the trick. In the old sailing ship days, it was a matter of sailing skill to get the weather gage; nowadays, it's a matter of steaming skill to get visibility, isn't it? The faster ship has the chance of making conditions of light suitable for long-range gunnery good for herself and poor for her enemy.

"Anyway, that's what happened there. All that afternoon, Von Spee, with the German Cruisers, maneuvered to get himself between the British ships and the coast of Chili, so as to have his enemies outlined against the western evening sky, while his own ships would be hard to see against the darkening eastern horizon. At that, Von Spee waited until the sun had gone down, for the glare would have dazzled the eyes of his gunners. The moment that the golden glow in the western sky threw the shapes of the British

ships out into sharp relief—they must have looked like silhouettes cut out of black paper—he let fly with his heavy guns.

"Von Spee opened fire at three minutes past seven and hit the *Good Hope* with the second salvo, so I read. The *Gneisenau* struck the *Monmouth* at the third salvo. By the fourth salvo, both the *Good Hope* and the *Monmouth* were afire.

"The *Good Hope* never had a chance to get back heavily because of low visibility, and the German cruisers were between five and six miles away. The *Monmouth* was entirely outranged. The *Scharnhorst* and *Gneisenau* had sixteen 8.2-inch guns between them against the two 9.2-inch guns of the *Good Hope* and the 6-inch guns of the *Monmouth.*"

"I don't know much about guns," put in the stoker, "but an inch or two in the size of a gun doesn't seem such a lot of difference."

"Isn't it, though!" exclaimed the boy. "It's a whacking big difference. Simmons, an old shipmate of mine, who's got a brother who's a gunner in the Navy, told me all about it. Why, Morgan, just look at the difference in the sizes of the shells in the guns we've been talking about. A 6-inch gun, that's a gun the diameter of the bore of which

is 6 inches, throws a 100-pound shell, an 8.2 inch throws a 275-pound shell and a 9.2-inch throws a 380-pound shell. You see, Morgan, as I understand it, the weight of a shell varies as the cube of its diameter. A 12-inch gun doesn't throw a shell twice as heavy as a 6-inch gun but eight times as heavy. A 12-inch shell is about one-third heavier than one of 11 inches, while a 13.5-inch shell is almost twice as heavy as the 11-inch. You see what monsters the shells of the 15-inch guns of the Q. E.'s must be, with their weight of over 1500 pounds.

"Now," he went on, "the explosive effect of a shell varies as the square of the weight of its bursting charge. If the weight of the 6-inch is 100 pounds, the weight of the 9.2-inch is 380 pounds and of the 12-inch 850 pounds, it would take fourteen 6-inch shells to produce the same effect as one 9.2 inch, and seventy-two to do as much damage as one 12-inch."

Morgan whistled in surprise.

"I hadn't any idee," he said, "that it made such a difference."

"It does," said the boy, "the way Simmons explained it. Now, at that battle near Coronel that we were talking about, your folks had two

9.2-inch guns and all the rest were 6's. The two larger German cruisers had sixteen 8.2's between them. Your guns were an old pattern, theirs were new. The *Scharnhorst* and the *Gneisenau* were the crack gunnery ships of the whole German Navy. They could see your ships and your men couldn't see theirs, leastways, they couldn't see to spot the shells.

"As soon as Von Spee commenced to fire, the armed liner *Otranto* got out of the road. Not being armored, she hadn't any business in an actual fight, and it was her duty to escape. Also, her small guns were not intended for long-range naval engagements. That left three British ships against four Germans. The *Scharnhorst* concentrated her 8.2-inch fire on the *Good Hope* and the *Gneisenau* put hers on the *Monmouth*. To make it worse, there was a high sea running and the 9.2 guns of the *Good Hope* were nearer the waterline than the 8.2's of the Germans, which blanked them a good deal. Both the *Good Hope* and the *Monmouth* were set on fire at the fourth round. The sun having gone down, the bright sunset glow faded rapidly from the sky. This, which should have helped the English, didn't, because the fires blazing on the two crippled British vessels made

them stand out like beacons and enabled Von Spee to go on shooting. He had the exact range, and could pound them all he pleased."

"Aye," agreed the stoker, "that's about the way I heard it, but you're forgettin' about the *Glasgow*."

"I was just coming to her," the boy exclaimed. "The *Glasgow*, all this while, was fighting the two German Light Cruisers the *Dresden* and the *Leipzig*. It was two against one, but the *Glasgow* was able to even it up a bit, because she carried two 6-inch and ten 4-inch guns of modern pattern, while the German light cruisers carried ten 4.1-inch guns apiece. That made it a pretty even fight, or it would have been, if visibility conditions had been the same for both ships. But the Light Cruisers were fighting at the long ranges established by the heavier vessels of their respective squadrons—a range altogether too far for accurate shooting by the smaller guns, which to reach so far have to have a high trajectory, making the shells drop downwards and reducing the width of the danger zone. This is proved by the fact that there was not a single serious casualty on any of the Light Cruisers.

"Soon after dusk, the *Good Hope* blew up and

went down with all hands. The *Monmouth*, crippled and sinking, without steerage way, was still being pounded by the *Gneisenau*. The *Glasgow* stood by her consort, hoping, when night came down thickly and before moonrise, to be able to pick up some survivors. But the *Gneisenau* did not want to miss the chance of completing the victory, and turned her 8.2-inch guns on the little *Glasgow*.

"The British Light Cruiser gallantly stood this for a quarter of an hour, and then, realizing that the *Scharnhorst* would come up in a few minutes and that she would not have a chance in the world against the two big ships with sixteen 8.2's between them against her own paltry 6-inch guns, she gave the order to cease firing. This was to keep the flashes of her own fire from betraying her presence to the enemy. Thus with all lights out, she fled into the night, to intercept the slow *Canopus* and tell the sad news of the destruction of the squadron.

"When the *Glasgow* was about twelve miles away from the scene of battle, she saw in the distance seventy-five gun flashes. These were from the *Nürnberg*, which had come up at the last moment, and which, seeing the blazing *Mon-*

*Courtesy of "L'Illustration."*

"VIVE LA FRANCE!"

**The Captain and crew of the French Cruiser *Bouvet*, torpedoed and sinking, saluting the flag as the ship went down, afire fore and aft.**

*mouth* all by herself in the midst of the sea, but still flying the British ensign, went up to finish her. The light 4.1-inch guns of the *Nürnberg* were quite powerful enough for this, because the *Monmouth* was so far down by the bow that her 6-inch guns could not be fired."

"Aye," growled the stoker, "an' she never put off a boat to pick up our fellows, drownin' in that icy sea."

His eyes blazed.

"That's what we wanted to get at 'em for," he said, "I'm not sayin' that Coronel wasn't a fair fight, but when the *Monmouth* went down, there wasn't any excuse for the *Nürnberg's* not puttin' out her boats."

"That's sure!" agreed the lad emphatically. "Von Spee afterwards tried to excuse the *Nürnberg* by saying that she hadn't been in the main action, didn't know what had happened, and, seeing a faint blur in the dark which she thought was the *Good Hope,* didn't want to risk running into range of the 9.2's of the larger ship. But that isn't much of an excuse, because it's a cinch that the *Nürnberg's* aerials must have picked up the wireless signals being flashed among the ships of the German squadron. There was a high sea

and that water flowing up from the South Pole must be horribly cold. I guess the *Nürnberg* just didn't want to try."

"They got what was coming to them a bit later," said the stoker. "That was when we came in. Go on, boy, you've been readin' this up pretty closely, an' what's more, you know a sight more about this than you ever got out of any papers."

"Well," said the boy modestly, "ever since Father got into the mine-sweeping game, he's been following the war pretty closely."

"Somebody's been loadin' your bunkers," the other assured him. "You're tellin' me lots o' things I didn't know. What happened to the *Glasgow* after that?"

"She struck out for the south as hard as she could tear. Although there was a big hole on her port quarter, made by one of the *Gneisenau's* shells almost at the last minute, she hit up twenty-four knots for twenty-four hours, wirelessing the news to the *Canopus* on the way. She had to get a move on, so as to reach the Straits of Magellan ahead of the *Scharnhorst* and the *Gneisenau,* if they should happen to be pursuing."

"The Black Gang must ha' been workin' then," remarked the stoker.

"Reckon they were," the boy agreed, "but she got there in time, all right, the *Canopus* joined her a while later and the two of them started off for the naval base at Port Stanley in the Falkland Islands for stores and coal.

"The *Canopus* was ordered to stay at Port Stanley to defend the harbor of that important coaling base, a thing she could easily do with her big 12-inch guns. She was too old to steam, but the weight of metal was there, just the same, and her big guns were protected by 12-inch armor, a good protection against 8.2-inch shells. As a matter of fact, she was grounded on the mud of the inner harbor of Port Stanley and practically turned into a land fort. The *Glasgow* steamed north to join Stoddart's squadron of the *Carnarvon, Defence* and *Cornwall* lying off the River Plate protecting Argentine commerce. By the way, Morgan, where were you when the *Glasgow* joined?"

"We were up the coast a ways patrolling," the stoker answered. "At least when we were called back to the station, the *Glasgow* was there. That was when I heard the story of Coronel. That was about the time the big Battle Cruisers *Invincible* and *Inflexible* came down."

"Let's see, then," put in the boy, thoughtfully. "When Admiral Sturdee came down with the Battle Cruisers, he must have found the *Carnarvon,* the *Glasgow,* the *Cornwall,* and the *Defence* there as well as the *Kent.*"

"There was the *Bristol,* too."

"What happened to her?"

"She came along to the Falklands with us," said the stoker, "and the *Defence* went off to the Cape to help a squadron on the look-out there if Von Spee should sheer off that way. But I've wondered, more than once, why the Germans should have left the Pacific, where they had already put the *Monmouth* and *Good Hope* out of business. 'Specially, why did they come to the Atlantic, where we had lots more ships?"

"I asked Dad the very same question," Jed answered. "He said the Pacific was getting too hot to hold the Germans. The Japanese had two squadrons out, one guarding the China Seas, the other working down towards Chili. Either of them was big enough to sink Von Spee out of hand. Besides that, there was the Australian Unit, including the light cruisers *Melbourne* and the *Sydney* and the old French cruiser *Montcalm.*"

"How about the big Battle Cruiser *Australia?*"

asked the stoker, "she was there when we were chasing the *Dresden.*"

"Sure she was," agreed the boy, "and she had started out after the *Scharnhorst* and the *Gneisenau* early in the game, but was called to England to help keep the North Sea. Afterwards, when a few weeks of war in the North Sea showed that the Germans hadn't got the nerve to fight, she was sent back. But you see, Morgan, with two Japanese squadrons and the Australian unit all working down in the South Pacific, it was time for Von Spee to leave. He loafed around Valparaiso until he got coal and then struck out for the Atlantic evidently to meet colliers at some point on the Brazilian coast, not reaching the Falkland Islands until December 8."

"We got there the day before," put in the stoker. "Now I can tell you our bit o' the story. I've got a right to tell the beginnin' o' this, for the *Kent* was the first craft to see Von Spee's ships that morning. The rest o' the squadron was in harbor, coalin', and we were on watch outside, as guard ship. It was just eight o'clock in the morning, at the change of watches, that the signal station ashore reported two foreign warships in sight. We weighed anchor at once and

were the first ship out, takin' up a firin' station at the mouth of the harbor. Twenty minutes later the other two German ships were sighted.

"It was just twenty past nine in the morning when the old *Canopus,* which was stuck on the mud, opened fire with her 12-inch guns at the two German cruisers at a distance of about six miles. That didn't worry the Germans much, they knew all about the *Canopus.* Twenty minutes later the *Glasgow* came out and joined us, because the Germans seemed to be plannin' to come down an' wipe us out. Neither the *Kent* nor the *Glasgow* had any guns worth countin' against Von Spee's cruisers. The *Carnarvon* followed.

"One of their men, he was a prisoner o' war later, told us: 'When we saw the *Carnarvon,* the *Glasgow* and the *Kent* steamin' out, we laughed till our sides ached.' We bloomin' well made 'em laugh on the other side o' their mouths, though. They didn't know what we had waitin' for 'em in the harbor."

"No," agreed the boy, "they didn't. The mystery trip of those huge Battle Cruisers the *Invincible* and the *Inflexible,* across several thousand miles of ocean, in these days of secret agents and

wireless, was a wonder. They had to coal twice, too."

"Where did they coal?" asked the stoker. "I never heard."

"They coaled at the Cape Verde Islands and in Brazil," answered the boy, "and never a hint of it got out. The German Secret Service was caught asleep that time."

"You should have seen 'em come out that mornin'," said Morgan. "I just had a squint at 'em before I went below an' stayed below for the rest o' the day. Battle Cruisers are big, an' they look twice as big as they are. I'm layin' good odds that when Von Spee saw 'em come out, cleared for action, with their huge turrets fore an' aft an' on either beam bristlin' with 12-inch guns, he didn't laugh any more, 'special as it was a clear day, an' in that forsaken climate one clear day in every three months is about the average.

"It was the biggest kind o' joss (luck). We had the whole bloomin' South Atlantic to fight in an' the whole day before us. But go ahead, you, an' tell us what you know. I'll chime in when I can. Most o' the day I was stripped to the waist shootin' coal instead o' shells."

"Well," continued the boy," as I understand it, the chase began around ten o'clock, the enemy's funnels and bridges just showing above the horizon, from the control top, with good glasses. A little after eleven o'clock, the colliers and transports attached to the German fleet were sighted and the *Bristol* was told off to summon the armed liner *Macedonia* and together to chase down and destroy the transports. This they did, without any trouble.

"As soon as the *Invincible* and *Inflexible* got going, they must have shot by you like a streak, Morgan, for around about 12 o'clock they were away ahead."

"Even then we were pilin' in the coal to her like Billy-O!" commented the stoker. "Not like we did later, though."

"The *Inflexible* was the first to open fire," Jed went on, "at five minutes to one, picking out the rearmost Light Cruiser, which was the *Leipzig*. A few minutes later, the *Invincible* joined in. The *Leipzig* was then ten miles away, but the *Invincible* and *Inflexible* had put on speed and were overhauling the little cruiser in a hurry. In twenty minutes they had gained a couple of miles on the foe and the fire got so hot that the three

Light Cruisers of the German squadron, the *Leipzig,* the *Nürnberg* and *Dresden,* turned off to the southwest."

"That was when we began to get busy," remarked Morgan.

"Yes," the boy agreed, "the way I got the story, you and the *Glasgow* and the *Cornwall* started out after the three little fellows, but the fast *Glasgow,* which, at the beginning of the chase had been attached to the Battle Cruisers, was away behind you and the *Cornwall* in this second chase after the Light Cruisers."

"Right you are," agreed Morgan, "she was."

"The *Invincible* and *Inflexible* then turned their fire on the *Scharnhorst* and the *Gneisenau,* keeping at a distance of about eight miles. Having the speed, the British ships could choose their own range, and armed with 12-inch guns against the 8.2-inch of the German vessels, they could pound Von Spee to pieces without having to worry about anything more than an occasional dropping shell. From all I can find out, Sturdee played a slow game. He risked nothing. At three o'clock the *Scharnhorst* was seen to be on fire. At four o'clock she listed heavily and sank in thirteen minutes. Not a man was picked up.

"This gave the *Invincible,* the *Inflexible* and the *Carnarvon* a chance to turn all their guns on the *Gneisenau.* At five o'clock one of her funnels was knocked away and by half past five she was stopped and in a bad way, on fire all over and steam escaping round her like a cloud. She sank about six o'clock. Of the eight hundred officers and men aboard the *Gneisenau,* the British rescued 108. The prisoners said that 500 had been killed or wounded during the shelling so nearly 200 must have been killed by the shock of that deadly cold Antarctic water. Von Spee, whose flag had been on the *Scharnhorst,* had gone down with every officer and man of his crew."

"That wasn't a fight!" put in the stoker scornfully. "That was just hammerin' little fellows that couldn't hit back. I'd ha' sooner seen Sturdee gone right in an' mixed it."

Jed, however, had done quite a good deal of reading along naval lines and saw the fault of this criticism.

"I don't think so," he answered. "After all, it was Sturdee's business to sink the German ships with as little damage to himself as possible, wasn't it? He had the speed, he had the guns and he had the time. Why should he run risks of

*Courtesy of "Illustrated London News."*

ALL THAT WERE LEFT OF TWO CRUISERS' CREWS.

**The end of the great Battle of the Falkland Islands. The German Armored Cruiser *Scharnhörst*, fighting to the last, had sunk two hours before and not a man was saved; the Cruiser *Gneisenau*, with her flag still flying, went down before the British Battle Cruisers. The British boats rescued 108 officers and men from the icy waters of the South Pacific, fed by Antarctic glaciers.** ***(Photo from H. M. S. Invincible.)***

having his own men killed and his own ships sunk when he didn't have to?"

"We stood up to our chap," answered the stoker resentfully.

"Sure," agreed the lad, "but, if I've got it right, after the *Leipzig* turned to the southward, all three of your Light Cruisers, *Glasgow, Cornwall* and *Kent* went after her."

"We didn't," corrected the stoker. "We were after three German ships, the *Leipzig,* the *Nürnberg* and the *Dresden.*"

"You can't count the *Dresden* in," retorted Jed. "She skipped out without firing a shot, just as soon as the fight started. And when the *Nürnberg* separated from the *Leipzig* and you went after her, that still left the *Glasgow* with 6-inch guns and the *Cornwall* into the bargain pounding the *Leipzig* with nothing but 4.1's. At that, she was under heavy shelling from two ships for three hours and didn't sink until late in the evening."

"We played our hand alone," the stoker repeated. "We ran up a signal askin' the *Glasgow* if we could go after the *Nürnberg* all by our little lonesome. We wanted to get even with her for sinking the *Monmouth,* our sister ship, that night at Coronel an' never puttin' out her boats to

save the poor fellows strugglin' in that freezin' water.

"We were told all about it, down below.

" 'See here, men,' one of our engineer officers told us, 'we've just got word that we're goin' to have a chance to polish off the *Nürnberg,* the Hun that sent the *Monmouth* down an' raced off without trying to rescue any of our men. We've got 6-inch guns that are just screaming to be used and the *Nürnberg's* got nothing bigger than 4.1. If we can get in range of her, our men will play hop-Scotch with her. But, although there's something wrong with one of her boilers, she can make nineteen knots easy and maybe twenty. We're only supposed to be able to make seventeen. It's just half-past three now, and we've five hours of daylight. If we can screw twenty and a half knots out of ourselves, we'll catch the *Nürnberg* before dark.

" 'This is our fight, men, our's right here. All the guns in the world won't help. We've got to win, and we've got to win down here. This is an engine-room fight, boys, and it'll be won or lost in the stoke-holds. We want every inch o' steam that can be crammed on and every revolution added to the tally means winning. Catch

her, men, catch her, and the day will belong to the Black Gang.'

"Did we work? You'd better believe it. I don't know what they did in the engine-room, a bloomin' miracle o' some sort, but I know what we did down below. We got the fire-axes out, went up on deck an' chopped the life-boats to firewood, throwin' the pieces down the ladders with shoutin'. The cooks and cooks' mates dumped all the provisions out of every wooden case in the lockers; the stewards did the same, and chucked the stuff down to us. Every wooden ladder in the place was turned into firewood. I heard, afterwards, that the flames were pourin' out of our funnels so that the *Nürnberg*, several miles away, thought we were afire.

"Work? That wasn't work, that was craziness. I tell you, every man below was looney. The fires themselves seemed to be mad. I never heard anything roar the way they did. We'd been running that way an hour when there came a message to the Chief Engineer officer:

" 'The Commander's compliments an' we're overhauling the chase!'

"You should have heard us cheer then! Every wooden door on the ship was wrenched off its

hinges, the wooden stools we sat on for mess were smashed into splinters an' fed to the fires, an' then we were told there was no more wood.

"No more wood? There was furniture!

"The ward room an' the gun room chairs an' tables, furniture from the officers' rooms, papers, everythin'! Wooden frames were torn off from 'round photographs, lead pencils, anythin' that would burn. The cooks sent down bottles of salad oil an' we broke the bottles over the coal before throwin' it in. I tell you, there were some of us who'd have thrown ourselves into the fire if our bodies would ha' made steam!

"And we got her, boy, we got her!

"We climbed up to twenty-two knots though I swear I thought we'd shake our rivets loose an' go down to the bottom in a heap, an' every time there was an increase in the revolutions, the word would be passed 'round an' we'd cheer.

"Men were droppin' in a faint all over, we'd haul 'em aside an' go on, an' when they come to, they'd grab a shovel an' set to again.

"We were gettin' perishin' short o' coal an' had burned nigh everythin' on the ship that would burn when there come a terrific roar overhead an' the *Kent* shook from stem to stern.

"At first I thought we'd hit a rock an' then the truth came over us all to once.

"We were within range an' had fired!

"The engines were rockin' an' the plates vibrated like they had chills an' fever, but there wasn't any shakin' that could be compared to what followed from the cheers that we gave. And before the cheer was over, another roar showed that a second salvo o' 6-inch shells was on its way. The fires were roarin' like mad an' the engines racin' with never a hitch. In half an hour we'd crippled the German an' could drop to slow speed again. It was time, for we'd bloomin' little of anythin' left to burn. By half-past six the *Nürnberg* was on fire forward an' had ceased firin'.

"Then the Commander passed word that we could come up from below an' see the end of the *Nürnberg*. It was us who'd won the fight an' he said so, handsome. We'd run in close, to a little under two miles, some one said, an' our boats were put out. The *Nürnberg* went under at half-past seven an' we were told that just when she sank there could be seen with the glasses a group of the German sailors still wavin' a flag, although the colors had been hauled down from the mast.

Our boats picked up twelve men, but five died from the few minutes that they were in that icy water. That was the end of the *Nürnberg* and we'd paid the Huns back good and plenty."

"And your hand?" queried Jed, remembering that the engineer had urged him to try and get the other's personal experience.

"Oh, there was a shell burst an' I just chucked the burning fuse out of the way," answered Morgan, and all Jed's persuasions could elicit no more of the story.

There remained but one ship left of that famous German squadron, the Light Cruiser *Dresden,* which had fled at the beginning of the Falkland Islands battle. She hid in a small inlet on the coast of Tierra del Fuego for months, but at last was compelled to creep out. The *Kent* saw her first and chased, but the *Dresden,* a faster ship, drew away. Her bottom was foul, though, for she had not been dry-docked since the war began, and the *Kent* stuck to her like wax, forcing the *Dresden* to burn all too fast her precious, precious coal. She reached Robinson Crusoe's Island, where she was overtaken by the *Glasgow* and the *Kent.* One broadside was exchanged and then the German flag came down. A boat came off for

a parley, but the *Glasgow* would accept nothing but an unconditional surrender. In response to this, the captain of the *Dresden* sent his crew ashore and blew up the ship so that she sank to the depths of Cumberland Bay.

So ended the last ship of Von Spee's squadron, victors at Coronel and vanquished at Falkland Islands, two of the four naval engagements of the war in which was clearly shown and taught the single naval lesson, as old as the hills, that naval victories are won years before the actual outbreak of war by the fastest ships, the heaviest guns and the best-trained men. An army may be developed in a year, a navy can be only by a miracle of growth.

## CHAPTER VII

### THE MOUTHS OF DESTRUCTION

A DAY or two later, while the *King Stephen* was resting quietly in port, it chanced that Jed and Morgan were on deck, chatting together about the war as they watched idly the happenings on the quay near by. A large and highly colored recruiting poster, showing a gun crew of bluejackets in the act of serving a naval big gun, set the stoker's thoughts off on a new tack.

"See that picter there?" he remarked, pointing scornfully to the poster. "It looks pretty enough but it's bloomin' rot just the same. It's no more than a 4-inch gun, from the look of it, even if it's as big as that, an' the gun crew's supposed to be pottin' at a big German Battleship looking, on that picter, somewhere about a mile away."

"Well?" queried Jed, wondering what his companion was driving at.

"Well!" the stoker ejaculated contemptuously, "it's bloomin' rot. How could a big 'un get so

close up? Take that Falklands fight you were talkin' about the other night, why, when we started to bark at the Germans, they were eight miles away if they were an inch. A smudge o' smoke in the sky, that's all I could see from the decks of the *Kent!*"

"Yes," agreed the boy, "you're right enough there. The poster is a bit crazy. And, at that, eight miles isn't so far for naval gunnery. Even a 12-inch gun can throw an 850-pound shell as far as twelve miles, if the gun is cocked up high enough in the air; at a twelve-mile range, a 15-inch gun will toss a shell weighing nearly a ton at a fairly flat trajectory, so that it's still going at tremendous speed when it gets that far."

"Twelve miles," repeated Morgan. "Isn't that about as far as you can see?"

"Pretty near," agreed the boy. "Simmons, who told me about all I know of gunnery, which isn't much, said once that if you make a pin-prick in a piece of paper and hold it out at arm's length, a big Battleship twelve miles away would look just large enough to fill the hole."

"An' what's the furthest that a chap can see?"

"From the compass platform of a Battleship, the visible horizon is limited to about fifteen sea

miles," the lad answered, "that is, of course, supposing that the conditions of light and atmosphere are just right. They mighty seldom are. Even the thinnest kind of a haze will close in the horizon line to ten or twelve miles. But, even so, your Q. E. 15-inch guns can throw a shell so far, that, from the height at which the shell is fired, the splash of the shell as it falls into the water is hidden below the horizon by the curving of the earth's surface."

"Then how in Cain can the gunners see where to shoot?"

"They don't see," answered Jed. "Aboard a Battleship nobody much sees anything of the action. A few officers in the spotting top and maybe a few signalmen and petty officers at the range-finders can get a look at what's going on, and that's about all. In nine of every ten big-ship actions, even the gun-layers themselves rarely get a chance to see on the wires of their sighting telescopes the ships they're firing at. Hits are made by the Fire Control system, corrected by what is known as 'trial and error,' worked out by gunnery officers in the spotting top, or the 'topping spot' as they call it."

"Aye," agreed the stoker, "I've heard the gun-

layers grouchin' about control, but I never rightly found out what they were drivin' at."

"Well," returned the boy, seeing that Morgan was anxious to know, "so far as I can make out, it's something like this. When you're shooting at a ship so far away that the gun-layer can't see it, the aiming of the guns has to be done by instruments and calculation, a whale of a job. First of all, you have to find out how far away the ship you're firing at is, and then—"

"Hold on," interrupted Morgan. "How do you find that out?"

"By the range-finder," said Jed. "I looked through one once on the *Lark* and got the chap who was in charge of it to explain it to me. There are several kinds, but the one I saw, which I think is the usual one, was like a long tube, something like a telescope, only you didn't look at it from the end, but from the middle. At either end there was a lens, like a telescope lens, which threw the picture on a mirror with a prism arrangement which reflected it to the middle of the tube. That was like two pictures, one coming from each end of the tube. You could turn a little thumb-screw in the middle which moved another prism by which the two images could be made to coincide exactly.

A little pointer traveled along a scale as you moved the thumb-screw, and when you got your two images in alignment, the scale would show exactly how far away the enemy ship was, or whatever you were looking at. It's really the measurement of the angles of a triangle, the base angles being at the two ends of the range-finder and the apex being the object."

The stoker scratched his head.

"Aye," he said, "I think I see what you're after."

"All right. Now, if you were at anchor and the other chap was at anchor, too, after you'd found out his exact range, it would be as easy as firing a gun on land. All you'd have to do would be to get his exact bearing to the fraction of a degree, elevate your gun to the right trajectory or upward slope for the required distance, and if your calculations were right and the guns were laid true, you'd hit him first shot and every time."

"Ah," said Morgan, "but you're not at anchor. We, down below, know that. When there's any fightin' goin' on, the ship's generally poundin' along an' the engine-room is askin' for more steam, in case it might be wanted."

"So is the other fellow," assented Jed. "That's

what makes Fire Control such a difficult business. Before you can do any shooting, you've got to know exactly how fast you're going, worked out in revolutions of the propeller, and exactly what course you're steering, worked out in degrees of a circle. So, even if the other fellow was at anchor, and you were steaming fast, not even at full speed, the range would be changing at the rate of over 500 yards a minute.

"But he's traveling, too. Probably he's not only going at a different rate from you, but on a different course. Maybe he's constantly changing both speed and course slightly, just to fool you. So, for Fire Control, you've got to read the range-finders continually, plot out from them the changes in position made by your own movements, figure out from those two things the probable speed and course direction of the enemy and lay your guns to hit a ship, maybe eight miles away, the position of which is changing every minute, yes, every second."

"Sufferin' salamanders!" ejaculated the stoker. "Somebody's got to do some figurin'."

"Now," continued the boy, "a ship eight miles away is out of flat trajectory, that is to say, if you shoot point blank at her, your shell will fall

a mile or two short. You've got to shoot up in the air, so that the curving shell will drop down on her. At high-angle fire, one ship, trying to hit another at the full elevation of her guns, will send a shell three or more miles in the air, according to the angle of elevation and the muzzle velocity of the gun. A 15-inch gun, at maximum elevation and with a full charge, could send a shell over the highest mountain in the world.

"That's where the big guns come in handy. Suppose action is opened at eight miles, a very reasonable range. A 6-inch gun, although you point her up at the moon, will hardly reach. A 9.2 will be stretching herself and is unlikely to hit. A 12-inch will be able to work a good deal of harm, but her shells will be falling almost perpendicularly, or at least, at a very sharp angle. A 15-inch will be shooting with a very flat trajectory, giving her a much bigger target and more penetrative power. Besides which, the bigger gun shoots truer. Even so, it's not direct fire. The gunnery officers have got to work out the range, and the elevation, and the windage and all sorts of things. You're right, Morgan, it takes a pile of figuring."

"But where does the spottin' come in?" queried

the other. "You always hear 'em talk o' spottin'!"

"That begins as soon as the firing opens," answered the boy, "as I understand it. Spotting is seeing where the splash of the shells comes as they fall into the sea. There's another place where the big gun has it over the smaller one. A 15-inch shell, weighing 1960 pounds, and traveling at high speed, makes an awful splash. It'll throw water 150 feet into the air. A 12-inch shell will make a splash only about half as big. And, when you're trying to locate a splash eight miles away, the bigger it is, the easier it is to see.

"That's all the Control Officer has to go by. He's got to be able to tell, looking through his telescope, whether the shell fell 500 yards or 200 yards short, or if it fell beyond the ship. When one salvo (the shells of a full broadside) falls short and the next falls beyond, a ship is 'bracketed.' When, in any salvo, some of the shells fall short and others over, then the foe is said to be 'straddled.' After a ship is straddled, if the corrections in range be carefully and exactly made, hits are bound to come.

"You see, it isn't as if you were shooting with one gun at a time, but with eight or ten connected

with a master-gun, making what is known as 'director-firing.' Sometimes the ship you're firing at will be lucky, and, though straddled, some shells will drop just short of her and some just over her, but what they call the doctrine of chance makes it sure that, sooner or later, some of those shells that are dropping all round the ship eight miles away will register hits. But you've got to be exact. A ship broadside on gives only a perpendicular target seventy feet high, and that's not big, eight miles away.

"I remember," continued Jed, "that Simmons once quoted to me a naval gunner's description of the difference between shooting a big gun on land and a big gun at sea. 'You nail a piece of paper on the trunk of a tree,' he said, 'then measure out an exact distance, say five hundred yards. Lie down on the ground, rest your rifle on a stone to steady it, and start firing. You'll probably hit the target first crack out of the box, and, after that, you ought to hit it nine times out of ten. That's gunnery work on land.

" 'Now put that same rifleman in a fast motor car. Start the car going at thirty miles an hour over a rough country road full of ruts. Let him stand up in the car, and let him fire at a jack-

*British Official Photo.*

A NAVAL "ARCHIE" AND HER MASTERS.

Modern type of anti-aircraft gun on special capstan, as used at sea. The gunnery lieutenant holds the projectile and the seaman the cartridge which propels it. The cables round the breech of the gun are part of the firing mechanism.

rabbit running lickety-split in a different direction from which the bumping motor-car is going. He won't come within ten yards of the jack-rabbit once in a hundred times. That's an idea of naval gunnery.'

"It must be even worse'n that," said Morgan meditatively, "because you can't swing around big turret guns weighing 100 tons like you can a rifle at your shoulder. It's a wonder to me they ever hit at all."

"And yet," the boy put in, "if the range isn't too desperately long and the visibility is half-way decent, naval gunners will commence hitting with the third or fourth salvo. It has to be done, often, too, in a heavy sea, when a ship is rolling, so that the difference of a fraction of a second in obeying an order to fire would make a difference of several hundred yards in the place a shell would drop. If you fire a hairbreadth too soon, when the ship is rolling towards the craft you're aiming at, the guns will be pointing up to the sky and the shells will go screaming over; if there's a hair's-breadth of a second of a delay, the shells will fall away short, for the gun muzzles will be pointing into the sea.

"It's right there," Jed went on, "that Simmons

showed me a big difference between your shooting and the Germans. Their instruments and range-finders are good, better, I reckon, than yours. Long range control firing they've got down to a science. But it's all mechanical. They even have a gyroscopic arrangement which they set to fire a gun automatically at a certain point in the roll of the ship. In British control firing, that's up to the gun-layers. At extreme distances, German gunnery is crackerjack.

"Take those two South Sea actions, for example. It only took the German *Scharnhorst* and *Gneisenau* fifty-two minutes to finish off the *Good Hope* and the *Monmouth;* while it took the *Invincible* and the *Inflexible* five hours to dispose of the *Scharnhorst* and the *Gneisenau.* The comparative advantage in strength in both actions was about the same.

"On the other hand, the German gunners go to pieces at close quarters. When control firing gives place to direct firing, the British gun-layers can't be beat. Take all the Destroyer actions. The British have been outshooting the German three to one. Under a hot fire German gunners get wild, British gunners steady down."

The stoker nodded.

"Aye," he said, "I've heard that before. But, even wi' good shootin'—losh! it's an awful waste to see hundreds o' shells, costin' hundreds o' pounds each, just plumpin' into the water."

"Sure," agreed Jed, "I reckon naval gunnery is about the most wasteful and costly business there is going. I don't believe the number of hits in action will average three per cent., if as high.[1] But, Morgan, suppose it does take a hundred shells to secure three hits, if those hits are made with big enough shells, they're pretty likely to cripple a ship.

"One well-placed 15-inch shell will put any ship out of business, no matter how big. I don't say it will sink her. It takes a lot of shells to sink a warship, built with water-tight bulkhead compartments. But if a ship is crippled so that she can't steam, or if a hole is blown in her side so that she lists either to port and starboard and can't use her guns, then it's easy enough to come up within a couple of miles and give her just one broadside at close range, which will send her to the bottom at once. Or a torpedo will do the trick.

[1] In the first part of the Falklands Battle, hits were less than two per cent, and in the Battle of Jutland, less than one per cent. Yet the same ships had made from sixty to eighty per cent in target practice.

But, before you can do that, the long-range work has to come in first."

"And at that," said the stoker slowly, "I don't see that even the men firin' the guns have any more o' the fightin' to do than we have. They don't see anything. It's only their regular gun-drill made real. For us, stokin', it's our regular job. All over the ship, in the ammunition hoists, at fire stations an' all the rest of it, it's just the same thing all over again. It isn't fightin'! It isn't any of it fightin'!"

There was a supreme contempt in his voice.

"In a way," agreed the boy thoughtfully. "Yes, I see what you mean. It isn't men who are fighting, it's machines. Even the spotting officers, with their powerful glasses, don't see any men. All they see is a gray spot on the horizon spitting out little flashes of fire and puffs of smoke. And the enemy can't see any men aboard you, either. It is sort of mechanical and inhuman, when you look at it that way.

"But that's only on clear days with high visibility," he went on, more cheerfully. "You can get all kinds of thrills when the Destroyers are in action, and when, in the dark or fog a Destroyer tries to get in a torpedo at a Battleship, at the

risk of being sent to glory herself, there's something doing and doing pretty quick. Dad was talking one day with a young Lieutenant of Marines who was in charge of a 6-inch battery on one of the Q. E.'s, when a Destroyer came kiting in out of the mist and was promptly sunk out of hand. As I remember the story, it ran something this way:[1]

"'What I loved most about the battle,' said this chap—he wasn't more than twenty years old—'was that it was fought so quickly that no one, especially those tiresome folks called superior officers, had any opportunity of kicking me off the stage.

"I will tell you all about it. I was up on my platform at my watch. My battery of 6-inch guns was down below, all loaded with high explosive shell, weighing 100 pounds each. All the gunners were ready for anything which might happen, but expecting nothing. So they had stood and waited during a hundred watches.

"It was graying towards dawn, but there was a good bit of haze and the sea was choppy. The

[1] By permission from "The Silent Watchers," by Bennet Copplestone (E. P. Dutton & Co.), a most excellent book on the British Navy during the war.

old ship was doing her rocking-horse trick as usual, and also as usual I was feeling a bit squeamish, but nothing to worry about. As the light increased, I could see about 2000 yards more or less —I am not much good yet at judging sea distances, they look so short.

"The Officer of the Watch was walking up and down on the look-out.

" 'Hullo,' I heard him say, 'what's that dark patch yonder three points on the port bow?'

"I looked through my glasses, and as I could see nothing, I switched on the big searchlight.

"Then there came a call from the Look Out near us, the dark patch turned into a thick smoke, and out of the haze into the blaze of my searchlight slid the high forepeak of a Destroyer.

"I thought it was one of our escort, and so did the Officer of the Watch; but as we watched, the Destroyer swung round, and we could see the whole length of her. I can't explain how one can instantly distinguish enemy ships from one's own and can even class them and name them at sight. One knows them by the lines and silhouette, just as one knows the lines of a flivver from those of a high-grade car.

"The Destroyer was an enemy, plain even to

me. She had blundered into us by mistake and was now trying hard to get away.

"I don't know what the Officer of the Watch did—I never gave him a thought—my mind simply froze on to that beautiful battery of 6-inch guns down below and on to that enemy Destroyer trying to escape. Those two things, the battery and the enemy, filled my whole world.

"Within five seconds I had called the battery, given them a range of 2,000 yards, swung the guns on to the enemy and loosed three shells—the first shells which I had seen fired in any action.

"They all went over, for I had not allowed for our height above the water.

"Then the Boche did an extraordinary thing. If he had gone on swinging round and dashed away, he might have reached cover in the haze before I could hit him. But his Officer of the Watch was either frightened out of his wits or else was a bloomin' copper-bottomed hero. Instead of trying to get away, he swung back towards us, rang up full speed, and came charging in upon us so as to get home with a torpedo. It was either the maddest or the bravest thing which I shall ever see in my life.

"I ought to have been frightfully thrilled, but

somehow I wasn't. I felt no excitement whatever; you see, I was thinking all the time of directing my guns and had no consciousness of anything else in the world.

"The moment the Destroyer charged, zig-zagging to distract our aim, I knew exactly what to do with him. I instantly shortened the range by 400 yards, and gave my gunners rapid independent fire from the whole battery. The idea was to put up a curtain of continuous fire about 200 yards short for him to run into and to draw in the curtain as he came nearer. As he zig-zagged, so we followed, keeping up that wide deadly curtain slap in his path.

"There was no slouching about those beautiful long-service gunlayers of ours and you should have seen the darlings pump it out. I have seen fast firing in practice, but never anything like that. There was one continuous stream of shell as the six guns took up the order.

"Six-inch guns are no toys, and 100-pound shells are a bit hefty to handle, yet no quick-firing cartridge loaders could have been worked faster than were my heavy beauties. Every ten seconds my battery spat out six great shells, and I steadily drew the curtain in, keeping it always dead in his

path, but by some miracle of light or maneuvering, the enemy escaped destruction for a whole long minute.

"On came the Destroyer, and round came our ship facing her. The Officer of the Watch was swinging our bows so as to lessen the mark for his torpedo, and I swung my guns the opposite way as the ship turned, keeping them always on the charging Destroyer.

"Away, towards the enemy, the sea boiled as the torrent of shells hit it and ricochetted for miles.

"At last the end came! It seemed to have been hours since I began to fire, but it couldn't have been more than a minute; for even German destroyers will cover half a mile in that time. The range was down to 1,000 yards when he loosed a torpedo, and at that very precise instant, a shell, ricochetting upwards, caught him close to the water line of his high forepeak and burst in his vitals.

"I saw instantly a great flash blaze up from his funnels as the high explosive smashed his engines, boilers and fires into scrap. He reared up and screamed exactly like a wounded horse. It sounded rather awful, though it was only the

shriek of steam from the burst pipes; it made one feel how very live a thing is a ship.

"He reared up and fell away to port, and two more of my shells hit him almost amidships and tore out his bottom plates like shredded paper. I could hear the rending crash of the explosions through my ear-protectors and through the continuous roar of my own curtain fire.

"He rolled right over and was gone!

"He vanished so quickly that for a moment my shells flew screaming over the empty sea and then I stopped the gunners. My battle had lasted for one minute and forty seconds.

"My gunnery chief came charging up, red and panting, while the air still thudded with my curtain fire and wanted to know what the deuce I was playing at.

" 'I have sunk the enemy, sir!" I said, saluting.

" 'What enemy?' cried he, 'I never saw any enemy.'

" 'He's gone, sir,' said I, standing at attention. 'I hit him with three shells and he is very dead indeed.'

" 'It's all right,' called out the Officer of the Watch, laughing. 'This young Soldier here has been and gone and sunk one of Fritz's Destroyers.

He burst her all to pieces in a manner most emphatic. I call it unkind. But he always was a heartless young beast.'

"Then the Bloke, who is a very decent old fellow, cooled down, said I was a lucky young dog, and received my official report.

"As for the torpedo, I never saw it, but the Officer of the Watch told me that it had passed harmlessly more than a hundred feet away from us.

" 'You sank the Destroyer,' said the Officer of the Watch, grinning, 'but my masterly navigation saved the ship. So honors is easy, Mr. Marine. If I had those guns of yours,' he went on, 'I would have sunk the beggar with about half that noise and less than half that expenditure of Government ammunition. I never saw such a wasteful performance,' said he.

"But he was only pulling my leg. All the senior officers, from the Owner downwards, were very nice to me. I don't suppose that I shall ever again fight so completely satisfying a naval battle, for I am not likely to come across another one small enough to keep wholly to myself."

The stoker nodded when Jed had finished the tale.

"That's just about what I was sayin'," he remarked. "A battle is only a kind o' drill. That yarn shows where drill comes in. If the gunners hadn't been at their posts, if there hadn't been shell right there for the guns, if the young Marine officer had had to wait an' ask somebody, a measly little Destroyer might ha' shoved a moldy into a Q. E. an' there'd have been glory for Fritz!"

"Sure," agreed Jed. "And if the Officer of the Watch and the Quartermasters and all the rest of them hadn't been on the job, the moldy that the Destroyer did let off would have hit. After all, if you put it that way, ten long years of monotonous drilling were more than paid for by that one minute and forty seconds.

"It's like that engine-room story the Chief likes to talk about where quickness of repairs saved a British Destroyer from being pounded to smash.[1]

"A Destroyer running on patrol work not far from Heligoland suddenly ran into sight of a German four-funnel Light Cruiser, which had seen her at the same moment and was tearing forward at full speed. Nine thousand yards is a pretty good

[1] By permission from "The Sub," by "Taffrail" (Geo. H. Doran & Co.), an authoritative book on the training and work of British naval officers during the war.

*Courtesy of "The Graphic."*

"I WANTS TO BE A TORPEDO-MAN!"

Young English munition worker, talking to King George V, during a royal visit to a powder works. "Though he was only sixteen years old," wrote one of the royal party, "his knowledge of torpedoes was something uncanny."

range for a 4.1-inch, but the German Cruiser was firing like mad and the second and third salvos bracketed the Destroyer.

"The Lieutenant-Commander was on the bridge smoking a pipe, apparently cool, and gazing through his binoculars at the Hun as he gave an occasional order to the coxswain at the wheel. The row was awful, an ear-splitting medley in which the roaring of the stokehold fans as the Destroyer increased speed and the humming of her turbines predominated, but above these sounds came the intermittent rumble and thunder of the hostile guns, that awe-inspiring crescendo as the shell came driving towards the escaping Destroyer, and the shattering roar of their explosion as they burst.

" 'Port fifteen!' the Commander ordered, as the Cruiser fired again. 'Port, man! Port!' as the coxswain, not hearing what he said, looked up enquiringly. 'For goodness' sake don't get the scatters, Bowles! I'm trying to dodge her salvos!'

"The coxswain, with perspiration oozing from every pore, wiped his face with a moist hand and nodded.

"The range began to lengthen out as the superior speed of the Destroyer told, but still the

enemy continued to fire an occasional round or two, though her shooting became more and more erratic as time went on. Seeing this, the Destroyer eased down her speed to keep the pursuer well in view, in the hope of leading the enemy into the jaws of a British Cruiser squadron.

"'We've got the legs of her,' remarked the Commander to the sub-lieutenant who was with him on the bridge, 'and the perishin' old rattletrap doesn't seem to be able to hit us, anyhow. If we can only get her to go on chasing us we may run into the *Dauntless*. She'll give her toko! Keep a good look-out for her ahead, signalman!'

"But he spoke too soon, for a minute or two later the Sub saw him glancing dubiously astern and then at the water alongside.

"'Singe my wig and whiskers!' he suddenly burst out. 'What revolutions have you got on that telegraph, Sub?'

"'Five-seventy, sir,' came the reply. 'About twenty-six knots.'

"'Quite sure?'

"'Positive, sir.'

"'I'll be jiggered if we're going that!' he exclaimed. 'Messenger! Go down to the engine-room and ask 'em if there's anything the matter.

Tell 'em we're not going anything like the proper speed! Hurry!'

"Presently the man came back.

" 'I saw the engineer orficer, sir, and 'e says 's 'ow one of the oil-fuel feedin' pipes in number two stoke-'old 'as got choked. 'E can't go no more'n twenty-two or twenty-three knots until . . .'

" 'O Happy Band!' ejaculated the Commander. "Can't go more than twenty-three?"

" 'No, sir. 'E's dishin' it up as quick as 'e can, sir, but don't know how long it'll take!'

"The skipper whistled uneasily and looked astern again, where the pursuer, from about 10,000 yards, had closed in again to the original 9,000 and was overhauling the Destroyer hand over fist.

" 'Go down and tell Mr. Prettyman that I am quite confident he'll do all he can,' he said to the messenger. 'But tell him there's a fat beast of a German astern of us who'll catch us if we don't watch it!'

"The bluejacket ran down the ladder with rather a scared expression.

" 'If that doesn't make 'em hurry up, I don't know what will!' the Commander added with a short laugh. 'Lord love a duck! If that fellow

gets within 6,000 yards, he'll hammer us to blazes!"

"The tell-tale orange flashes resumed. Column after column of water spouted out of the sea just astern of the Destroyer.

" 'Oh, Christmas! This'll never do!' the Commander muttered. 'Hard-a-port, Bowles! Steady her on north fifteen west. Sub! Pass down a range and deflection to the guns and open fire as soon as you can! She's coming up fast and if we have the luck to hit her we may shake her off. I'm going to dodge her salvos as best I can.'

"But the ominous flashes from the Cruiser's shells followed every movement. It was good shooting on their part, good navigating on the Destroyer's. One shell just missed the bridge, another fell only ten yards short, and drenched the gunlayers aft with the water of the splash, but the shells were descending at such a steep angle that, when they burst, the splinters shot upwards instead of driving onwards as they would have with a flatter trajectory.

" 'Starboard fifteen. Steer due west!'

"The range had come down to 6,000 yards. At this point a sudden gleam like light shining through a garnet, followed by a puff of brown

smoke told that one of the Destroyer's shells had struck. But it did not lessen the Cruiser's speed. Evidently, however, one of her forward guns had been knocked out by the British shell, for the firing grew more irregular. It got heavier again as the Cruiser came within 4,500 yards, a mere matter of 2½ miles. Some of the shells missed the Destroyer only by a few feet. That was Joss, pure Joss, for any one of them would have crippled the fleeing ship.

"The Commander had still another card to play. He pressed an electric button communicating with the engine-room and, thirty seconds later, the funnels were vomiting a rolling, billowing cloud of inky blackness, so thick and solid-looking that it seemed as if one could almost walk on it. Then, by delicate manipulation of the helm, he changed the course widely yet at the same time keeping this impenetrable pall between the Destroyer and the enemy. The shells ceased. The Cruiser could see nothing to fire at.

"Then, a few minutes later, the Chief, his face, hands and brown overalls streaked and saturated with grime and oil-fuel, appeared on the bridge.

" 'I've cleared that confusticated pipe!' he exclaimed breathlessly, wiping his face with a filthy

handkerchief. 'I'm whacking her up all I know,' he added.

"'Good on you, old boy!' the Commander laughed light-heartedly, patting him affectionately on the arm. 'You shall have a bucket of bubbly wine at my expense. You did it only just in time, though. Another minute or two and . . .'' He pointed at the sea.

"'Was it as bad as that?'

"'Bad? I should jolly well think it was, old bird. You should have seen the bricks flying about! If I hadn't remembered to ask you to put up that nice little drop of smoke, we'd have been doing a Victoria Cross act by now. Sinking with our colors nailed to the mast and all the rest of it!'

"So," concluded Jed, "as the Chief always says, if everything goes right in the engine-room, it wins the fight; if anything goes wrong, it loses it."

"Right-O!" agreed the stoker. "But in that yarn, I don't see where there was such a hurry. The Destroyer was tucked away behind her smoke."

"Yes," agreed the boy, "but the Cruiser had the legs as long as the fuel-pipes were crippled

and she could have come up to windward. What good would the smoke have been then?"

"Aye," said the stoker, "after all, it's us down below that does it."

"Have you heard what a famous naval writer once said about that?" asked the boy. "'If the conning-tower is the brain of a ship, the engine-room is its heart. These men, upon whose faithful efficiency everything depends, who, buried in the bowels of ships, carry us into action and maintain us there, who are the first to die when a ship sinks and the last to be remembered in the Honors lists, these men are of more real account to us than almost all of those others who prance in our decorations upon the public stage. And so it has been all through the war. Whenever the engine-rooms have been tested up to the breaking strain, they have always, always stood the test.'

"I don't suppose," said Jed, "that anything higher can be said of any one than to say that he has always stood the test."

## CHAPTER VIII

### THE SUICIDE FLEET

"LAD," said the engineer, one hot day in the middle of July, "I've been thinkin' that ye're nae sae ignorant o' machinery as ye once were."

"I hope not, sir," answered Jed, wondering what was coming. "I've tried to remember what you've taught me."

"Do ye mind what I've told ye, various whiles, aboot gas engines o' different kinds?"

"I think so."

"Ah! Weel, maybe I'll gi' ye a bit of a try-out," continued the Scotchman, and he proceeded to put the lad through a course of questioning that left him staggering and tired out after half an hour.

"Ye micht be worse," was the engineer's cautious comment, "conseederin' that ye've had nae practical expeerience wi' thae types. How would ye like a spell on a motor-boat, noo?"

"I'd like it, sir," answered Jed, for he had

grown very weary of the sameness of life on the *King Stephen,* "it would be something new."

The engineer frowned. At the age of fifty years a man does not always realize that a lad's desire for novelty is not necessarily fickleness. It may be a very natural and very proper desire to learn as many new things as possible about the very strange world in which he lives.

The youngster who is not always ready for new experiences is worn out before his time. He rarely amounts to anything. He is apt to become a part of the background of life, necessary perhaps, but profoundly uninteresting to himself and others. By the same token, a man at the age of fifty who is still looking for new experiences generally reveals that he has lost the road to maturity. Perhaps some consciousness of this crept into the Scotchman's mind, for, after a pause, his frown relaxed.

"An' suppose this motor-boat were just a pleasure trip?"

Jed looked thoughtful. He had taken his duties on the *King Stephen* very seriously, and while he had not fully understood what was the exact nature of her experimental work, he had seen abundant evidence of the fact that she was a very con-

siderable factor of obstruction to the German submarines.

"If it were only that, sir," he said at last, "I think I'd rather stick here. There's not an awful lot of fun about it, but a fellow's doing his bit."

"A sort of 'Daddy, what did you do in the Great War?' business, eh?" said the engineer, quoting England's most famous recruiting poster. He looked pleased, nevertheless. "Weel, I'm nae surprised an' I think the better o' ye for sayin' sae. But it'll be nae pleasure trip if ye come along o' me."

"Is it with you, sir? Then I'd like to go, sure!"

There was no doubt as to the sincerity in Jed's tone and even the canny Scotch temperament of the engineer was flattered.

"Ye're a gude lad, Jed," he said, "an' a faithful, an' ye've no' been haverin' (talking) aboot what ye've seen aboord here. But if ye've kept your teeth shut on the *King Stephen,* ye'll need to keep them locked in yon work."

The boy's eyes lighted up with eagerness.

"Is it dangerous?" he asked, excitedly.

"I'm no sayin' that it's dangerous, but ye micht do less harm by sendin' a torpedo into one o' oor

ain ships than by talkin' careless o' what ye're likely to see."

"You can trust me, sir!"

"Aye, my lad," said the engineer, "I think I can trust ye. For a fac', I've gone bail for ye, myself. There'll be only six of us aboord, an' every one would have his tongue cut oot, afore he would betray the secrets o' his country."

"Why are you taking me, when I'm not even an Englishman?" asked the boy.

"I've refused three different assistants because I didna like their faces," the Scotchman replied, "an' then they bid me find some one I would take. Ye see, now."

"I'll not fail you," answered the boy quietly, though his heart was beating fast.

"I ken that," said the engineer. Then, in an ordinary voice, he went on, "She's a beauty, the craft, with two o' the prettiest engines I've ever put eyes on. They're classed at 120 horse power an' she claims twenty-five knots speed. Between oorselves, I think we can twist nigh thirty oot of her."

"And when do we say Good-by to the *King Stephen?*" asked Jed.

"To-morrow," answered the engineer, "an'

mind, now, ye ken nothin' o' where ye're goin'. Ye're laid off the *King Stephen,* that's all."

"And what shall I say at home? What shall I tell Father?"

"Ye'll tell him just exactly naethin'," was the answer. "There's no need to tell a lie an' ye can't the truth. If ye've got to say somethin', say ye've been told to report for orders, which is true an' means naethin'. But ye'll not be goin' home for a long while."

"Why?"

"That," said the engineer, looking curiously at the boy, "ye'll find out soon enough."

That night Jed could hardly sleep for excitement and he was all on edge with anticipation, when, next day, he accompanied his friend the Scotchman on a short railway journey to another small seaport.

The *Garpike* was lying at the wharf. She was a motor-boat of good size, very powerfully built, with a high whale-backed bow and a three-pounder gun. Her engines were such as the boy had only thought possible in dreams. The *King Stephen* had been marvelously engined, but those of the *Garpike* had a strength and delicacy such as the lad had never seen equalled.

*Courtesy of "The Graphic."*

**The "Stinging Water-Beetles."**

**Patrol squad of motor-boats, which by their speed and ease of handling are a terror to the German submarines. Acting in co-operation with a hydroplane overhead, they can wheel and circle on the surface, either dropping depth bombs or keeping the submarine submerged so long that its batteries become exhausted; or running blind, it loses its way in the deep.**

"Are these English engines, sir?" he asked the engineer after his first preliminary survey of them. "They're away different from ours."

The Scotchman shook his head in response to the lad's question.

"No, lad," he said, "I'm dootin' that we can build the like in England nor in America, aye, maybe no' even in Glasgow. They're French engines, lad. Ye ken, when it comes to really high-grade workmanship in sma' things, ye have to go abroad. In your country, they'll turn out something that works an' maybe works well, in great quantities. They'll make a watch for a couple of shillin' or a motor-car for maybe ninety guineas. On the Clyde an' the Tyne we can turn oot the biggest an' the best ships an' naval guns in the world. But when it comes to delicacy o' macheenery, we're no' able. Ye have to go to Switzerland for a watch, to France for a motor-car an' to Italy for an aëroplane engine.

"Why is that?"

"Weel," said the engineer, "I'm thinkin' it's a good deal because o' two things; the difference i' the cost o' labor an' the kind o' fouk that are goin' to handle them. Take America, now. I've been over yonder a muckle times an' always I've

heerd them talkin' about the neecessity o' makin' everything 'fool-proof.' Ye hae no mechanicians in America, only mechanics. Ye tak' the son of a butcher, send him to night school for a week or two, an' call him an expert. We apprentice a lad to a trade when he's young, an' after he's been workin' a hantle o' years he's only a journeyman, still. That's one thing. Ye hae to sacrifice delicacy to strength.

"Then, for a second thing, owin' to the high wages ye pay, the maist o' your macheenery is machine-made roughly, for ye can't afford to hae a workman spend a great deal o' time on small parts. An' that means that ye hae to give a bit more play on all your engines, an' as ye know, play means vibration, an' vibration means strain, an' strain means that ye have to hae mair strength, which means clumsiness. It's nae that ye couldna do it, it's that the whole idee o' work in the United States is to make a thing 'good enough,' not as pairfect as possible."

Jed thought for a minute.

"I guess you're right, Chief," he said, "but isn't that because we have all sorts of people coming over to America all the time, people who don't even know English and haven't any idea of Amer-

ican ways? After all, you English and the French can fix your own ways of teaching and training to suit your own kind. We've got to fix it so that a Ruthenian, a Finn, a Polack, a Hungarian Jew, a Greek, or any one else, can pick up enough to get along. If we tried to train them all as thoroughly as you say they do in France and England, why, those chaps would be middle-aged before they started to make a livin'."

The engineer tapped out the ashes from his pipe.

"I'm not creeticizing, mark ye," he said, "I'm just pointin' out to ye why ye have to look to the Old World for your high-grade products. That's nae true o' everything, mind, for there's a hantle o' things that Americans do well. But ye'll never do delicate things well, as long as ye hae to keep the grade o' technical education low to provide for a heavy immigrant population; an' ye'll never do delicate things well as long as ye keep the wages o' workers so high that a manufacturer has to do everything possible by labor-saving macheenery so as to be able to meet his pay-roll by the quantity o' stuff he turns out. 'Tis not a creeticism I'm makin', 'tis a condition I'm pointin' oot."

Jed was inwardly nettled at this sharp analysis and returned to the charge again and again. He declared with triumph that American yachts had continually beat the English, and was promptly told that the designers, though living in America, were French. He bragged about the telephone and was reminded that the inventor was a Scotchman, and educated in Scotland. He tried to claim priority in electrical affairs and was bidden remember that wireless was an Italian application of a German discovery, that electrification of railways was German, and that electric lighting resulted from discoveries made in Budapest, Hungary. He was promptly informed by the engineer that the world's greatest physicists were Russian and Swedish, the mathematicians Polish. After which, Jed became duly humbled and settled himself to a study of his engines, growing more and more amazed at the perfection of workmanship. Even if, as some American firms boasted, their engines were "built like a watch," these were built like a chronometer.

The Scotch engineer himself was a revelation to the boy. He had supposed, already having had a good theoretical training from his chief on the *King Stephen,* that he would understand the en-

gines of the motor-boat in a day or two. After a month on the *Garpike* he found he was still learning, working out complicated tables of stress and strain, of centripetal and centrifugal forces, of fractional differences in explosive mixtures in the cylinders, of a thousand-and-one different things of which he had no idea. One day, in despair, he said:

"Won't I ever have finished learning about these blamed engines?"

The engineer looked at him curiously.

"If ye want to know them thoroughly," he answered, "I'm dootin' that your life will be lang enough."

He held out his finger on which there was a drop of oil.

"What's that?" he asked.

"Oil," said the boy.

"An' what is oil?"

"It's—" began Jed confidently, and stopped. He thought hard for a moment and then answered shamefacedly, "I—I don't think I could tell exactly."

"No," answered the engineer, wiping his finger on a piece of waste, "I dinna think ye could. An' while I took a lang coorse o' chemistry when I was

your age, an' hae studied it ever since, I couldna tell ye exactly, either. There's mair than a lifetime can be spent just studyin' oils. Yet a really gude engineer should know why one kind o' oil will gum his engines so they won't run, why another kind will turn thin an' run off, why a third will dry an' get waxy, an' why a fourth may attack the metal o' the bearin's.

"It's not unlikely that ye may think this only a little thing, lad, an' no' worth the conseederin', but ye heard Morgan talkin' aboot the time the *Kent* caught the *Nürnberg* by burnin' every sliver o' wood on the boat. Do ye think, if the *Kent's* engines had been gummed up wi' bad oil, that all the steam in the world in her boilers would ha' done any good?"

"No," agreed the boy, "it wouldn't."

"An' metals are the same way. It doesna do to be ignorant o' them. If a cylinder shaft were made o' cast iron, how long would it stand? If bearin's were made o' lead instead o' Babbitt or Phœnix or any o' the other alloys, how long would they wear? Yet I'm thinkin' it's little ye know aboot the properties o' metals, their alloys an' their manufacture. Dinna be afraid, lad, ye can work till ye've got gray hair, in front o' those

bit engines afore ye, an' still hae a lot to learn. But," he added, noting the downcast look on the boy's face, "ye're doin' fine an' I'm weel pleased wi' ye."

"We haven't had much chance to show what those engines can do, though," commented the boy.

"Sae much the better. It's weel content that Andrew (the Navy) would be if we never saw a submarine at all. Thae big ships yonder are no' hankerin' for a torpedo in their hulls."

"I've been wondering many a time," said the boy, anxious to turn the conversation in this direction, "why it is that this Battleship Squadron goes out so seldom."

The engineer half-closed his eyes and looked narrowly at the boy.

"What's the use o' them burnin' coal when there's naething for them to fight?" he retorted. "The patrol boats an' Destroyers are keepin' the sea clear. Whiles the fleet goes out, to do a 'Silent Might Parade' as they call it, even that's no' greatly needed. It's just the knowin' that we have them, an' have them ready, that gives Fritz the cold shivers."

"I don't wonder," admitted the boy, as he cast

his glance toward the inner harbor where the great ships were riding.

There were fourteen of them, huge gray monsters with double turrets fore and aft from which the long lean muzzles of the guns protruded. The very masts looked wicked with their crow's nests and spotting tops, the gaunt naval bridges spoke of a never-ceasing watchfulness, crowning the humped super-structures which suggested the stores of death hidden within. The decks, kept cleared for action, had a menacing appearance in their freedom from everything that did not suggest the grim work of war. The anti-aircraft guns, pointing at every angle to the sky, spoke eloquently of the fate of an overhead spy or bombing plane.

And ever and always, day and night, from the funnels of each vessel rose thin curling clouds of vapor, showing that fires were on and steam up for a dash to sea at almost any moment.

The *Garpike* had been on the station for several weeks. Together with three other motor-boats, she had been keeping patrol, running to and fro at varying distances from the mouth of the little land-locked fjord of a Scotch firth where the fleet lay at anchor, keeping a close look-out for enemy

submarines which might try to creep in and torpedo some of the larger craft.

During that time, two submarines had been sighted, curiously enough both by the same motor-boat. One U-boat had been hit and probably sunk, the other had dived and escaped. Jed was insatiately jealous of this other motor-boat's record. There was no laxity in his watch. Never was there a moment, day or night, that at least two of the four motor craft were not on patrol.

The days of most significance were those on which, in response to wireless signals received on their towering aërials, the super-Dreadnoughts moved out of the harbor, silently, majestically, the boatswain's pipes twittering. There were no names on the bows of the vessels, but Jed recognized in the flagship of the fleet the super-Dreadnought *Ajax,* with her ten 13.5-inch guns pointing ahead and astern, so placed that the whole ten could fire on either broadside. Others he placed in the Orion Class, two in the Hercules Class, as well as smaller vessels. Not one of them showed anything less in size than 12-inch guns.

"Well," said Jed, one day, as he watched them steaming slowly out of the harbor, "if I were a German air scout and saw those boys heading our

way, I think I'd wireless back a warning for everything smaller to scurry to cover."

"Oo, aye," agreed the engineer, "maybe that's what happens. I'm dootin' if any o' yon ships hae fired a shot."

"The gunners aboard must be hungry for some of the fun," suggested the boy.

"They'd hae all the fun they wanted an' more, too, if it wasn't for us, keepin' the tin fish away."

"But there are chains and mines and all sorts of harbor defenses down," protested Jed, "I don't see how a submarine could get near enough to send off a torpedo, nor how a torpedo would get through the nets."

"All gude things, very gude things," answered the engineer. "But meechanical devices are nae gude at all by themselves, lad, it takes watching, forby. There's ways o' creepin' under nets an' pushin' aside mines. But there's no way o' makin' a soobmarine inveesible. Not yet. It's a keen eye an' an airnest watch that coonts the most."

Three evenings after the return of the fleet, Jed, chancing to look over the water, thought he saw a small floating object between the motor-boat and the shore. The *Garpike* was not on the outer

*Courtesy of "The Sphere."*
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THE UNDER-SEA PIRATE SUBMERGING.

The German commerce-raider, having got the bearings of her des victim, and threatened with shell-fire, sets her planes to dive, with the intention of loosing a torpedo.

***British Official Photo.***

**TORPEDO LEAVING ITS TUBE.**

**The "mouldy" dives at a flat angle from a destroyer's deck, dips rapi and burrows through the water, and can travel several miles driven by its own mechanism, not by the firing charge. The steering is by gyroscope.**

patrol, but lying at anchor in the inner harbor close to the warships.

Stammering with excitement, the boy shot through the little door to the Chief's cabin and told him what he had seen. The engineer grabbed his glasses and followed the boy. The dusk was coming fast and there was nothing to be seen.

"Maybe a fish jumpin'," suggested the engineer.

Jed shook his head.

"It wasn't that," he said. "It was bigger!"

"An' just whereabouts?"

"About seventy-five yards over that way."

The engineer negatived the suggestion at once.

"No," he said, "the water's shallow over yonder. There's no' more than six feet, at most. A soobmarine couldna nose along there without showin' the half o' her connin'-tower, at least."

"A torpedo?" queried the lad.

"Nor that, either. A torpedo travels gey fast, thirty knots at least, an' it leaves a greenish-white wake, that ye can see for two or three minutes after. Forby, if it were a torpedo, the whole of it would be under the water an' ye couldn't see anything black above the surface."

"How about a mine?"

"The tide's still flowin' out," replied the engineer, looking over the boat's side, "though it can't be far from the turn. A mine, even a Leon, canna float in against the tide."

For a second Jed was non-plussed, but there was a decided streak of stubbornness in his nature.

"But I'm sure I saw something! Chief, couldn't I swim over there and find out?"

The Scotchman smiled at the lad's positiveness.

"Ye're pigheaded enough to be a Glasgow man when ye set your mind on a thing," he said. "If ye want to take a swim, I'm not preventin' ye. The evenin' is fine, an' ye're like a fish in the water, nae doot o' that." He chuckled. "If it's a soobmarine, be sure to bring it back under your arm!"

Jed hardly heard the last words. The instant the engineer had given him permission to go, with half a dozen quick movements he had slipped off his clothes and was in the water. The sea was cold, almost as cold as on the night when he had saved his father from drowning after the *Puritan* had been blown up by a mine, but his vigorous strokes soon warmed him up. He set off at an angle which took him in the direction of the flagship, looming huge in the evening light. There

was a young moon, giving a silver gleam as the glow of sunset faded.

Soon, ahead of him and some distance away, Jed saw the round object again. It looked smaller. Whatever it was, it was traveling forward, but slowly, so slowly that at the speed with which Jed was swimming, he would catch up with it before it reached the ship's side.

He thought it must be a seal, though seals seldom swam slowly. Still, he knew they had been seen on the Scotch coast.

Never before had the lad put such force into his strokes. He sped over, or rather through the water, like a scuttering racer, but he was too good a swimmer to splash much. He was overhauling the object rapidly.

Within ten yards of the ship it disappeared.

Jed dashed the spray out of his eyes and trod water. What could have happened?

A quick wrench of fear came over him at the thought that it might be a shark, which had turned over to snatch at him from below, but as the idea flashed to his mind, he recalled the round shape of the object. He could never have mistaken a shark's triangular fin for that, and sharks were rarely seen so far north.

The boy swam quietly and slowly forward, almost submerged, head thrown back, only his nose, eyes and forehead above the surface.

Then, close by the great anchor cable of the flagship, he saw a head pop out of the water. It was a round, bullet-shaped head, with close-cropped hair. Jed was close enough to hear the other swimmer take one or two deep breaths and then he saw the figure dive again.

One second's hesitation, and then Jed understood!

He collected all his energies and swam forward quietly until he was within the deep shadow of the ship, a few feet from the cable. Then, judging that by this time the diver below him would have nearly exhausted his possibilities of holding his breath, Jed plunged down into the depths.

Even in the half-darkness he saw the white gleam of the body and he grappled from behind, throwing both arms around his victim.

The other, a powerful fellow, was taken at a terrible disadvantage. He fought hard, striving to get to the surface of the water, but Jed threw one leg around the anchor chain and held hard.

Had both dived at the same moment, Jed would have had no chance, but, just when Jed had

grappled, the other had been down a whole minute, perhaps more. He had been, indeed, on the point of coming up for air. With incredible endurance he writhed and struggled in Jed's grip, although his lungs must have been stabbing like heated knives, but the boy had seized him from behind and he had no way of breaking loose the lad's clutch.

As for Jed, though he had taken a deep breath before coming down, the tussle was exhausting him. An iron band seemed to clamp across his head and his chest felt as though it were bursting for lack of air. Still he held on. Just as he felt that he must let go, there came a sudden relaxing of the figure in his grip, and a stream of air bubbles. Human resistance could no longer endure and the prisoner had opened his lungs to the inrush of water. Jed let go and shot up to the surface.

For a few minutes the lad hung there, gasping, seeing no sign of his foe. Then down he went again to find out what the stranger had been doing to the anchor chain. About eight feet below the surface he found a stout wire ending in a spring lock, which had been clasped through one of the links of the cable and snapped shut.

Jed came up again for air. Then he dived

once more and followed the wire, very carefully, at a length of about fifty feet reaching the very thing he feared.

There was no time to lose!

Shooting up to the surface again, a few strokes took him back to the ship. Though the anchor-cable was rough and rusty he climbed up it rapidly and wriggled through the hawse-hole, which brought him out near the windlass and so on deck. Between the brown-red stains of rust on his body and innumerable small scratches from the chain, he was a sight. He had not gone five steps along the deck when a bluejacket stopped him.

"Where in cripes did you come from?"

"I want the Officer of the Watch!" gasped Jed. "Get him, quick! It's awfully important!"

The bluejacket set off on a run and was back in a few seconds with a naval lieutenant.

"There's a mine fast to your starboard anchor cable, sir!" panted the boy. "It's ebb, now, and the mine's clear, but the tide's turning and that'll bring it under you. I tried to unfasten it but I couldn't with bare hands. It's fastened with wire and a lock of some sort."

The young officer grasped the whole situation without asking a question. He gave a couple of

quick orders. In less than thirty seconds half a dozen men were over the side with wire nippers, some swarming down the anchor chains, one or two diving from the side of the ship, high dive though that was.

The lieutenant paid no heed to Jed, shivering on the deck, but peered over the bow.

After a minute or two there came a shout from below. The mine was clear. At almost the same moment, one of the ship's boats, which had been lowered, shot forward and took the dangerous object in tow. The moon, coming out from behind a wisp of cloud, showed the curious scene as clearly as though it were still daylight.

The light fell on the ship's deck, and Jed, who had thought it curiously warm and soft to the feet, looked down and saw that it was heavy canvas, stretched tight, and painted to resemble steel plating! Over his head reached the long barrel of the 13.5-inch gun. Jed looked at it, and looked again, unable to believe his eyes.

The gun was made of wood!

Feeling as though he were in a nightmare, the boy passed his hand over his dripping hair, and scanned an anti-aircraft gun, near by. The long tapering barrel pointed to the sky, but there were

no wheels and lever for elevation, no revolving mechanism, no breech. Just a block of wood cunningly painted.

The anti-aircraft weapon was a dummy!

Close behind him was the great turret, seeming capable of defying the most terrific impact of high-explosive shell. The boy scanned it closely. What should have been 12-inch plates of Harveyized steel were but heavy planks of deal, painted gray.

The armor was a fake!

It seemed incredible, but as one piece of evidence after another smote on Jed's attention like the strokes of a hammer, he was stunned with a sudden conviction.

The great battleship of frowning portent, this grim, gray monster of the sea, this flagship of immeasurable might, was but a fraud, a make-believe, a hollow sham.

The boy's head whirled. Was he awake, or dreaming?

Out of this maze of bewilderment, Jed was suddenly recalled by the voice of the lieutenant, addressing him:

"You might shiver less if you put something on," he said, "and maybe a drop of something

warm wouldn't do you any harm, after your swim."

He glanced at Jed and saw that he was but a youngster.

"Murchison!"

"Sir?" answered one of the men.

"Have some cocoa taken to the ward-room immediately.

"Aye, aye, sir."

Donning some underwear and shore-going clothes, and with a swiftly-contrived but substantial meal in front of him, Jed soon felt comfortable again, and told his story in all its details first in the ward-room, and afterwards in the Commander's cabin.

"Very praiseworthy," commented the Commanding Officer, when the lad had finished, and Jed flushed with pleasure. "You have undoubtedly saved one of His Majesty's ships. It has been reported to me that the mine has been found to be a Leon of a new pattern, and if you had not notified us, we should probably have been blown up without ever knowing the cause. Lieutenant Rankin, I presume, has all the details?"

"Yes, sir; I think so, sir," answered Jed, "he took a lot of notes."

"Very good. Now there is another reason why I wished to speak with you myself," the Commander continued. "Did you notice anything about this ship since you came on board?"

The boy looked him straight in the eyes.

"Well, yes, sir," he said, "I did."

"What, for example?"

"Why," blurted out the boy, "the guns looked dummies, and the decks were painted canvas, and the armor—"

"And all the rest of it," interrupted the Commander.

Silence fell for a moment. Evidently the captain was thinking the matter out.

"You're in the Naval Reserve?"

"Naval Volunteer Reserve, sir."

"You have put yourself in a curiously difficult position," the Commander said. "You have not only done your duty, but you have shown considerable perspicacity and courage. You have been of great service. And yet I am afraid that I shall have to put you technically under arrest."

"Under arrest, sir? Why?"

"Because the character of this vessel is a profound naval secret."

"You're afraid I'd talk, sir? Indeed I

wouldn't! My chief took me with him from the *King Stephen* just because of that."

"You were on the *King Stephen?*"

"Yes, sir. Seven months."

"What work was she doing then?"

"I don't exactly know, sir," answered Jed, scenting a trap in the apparently harmless question.

"You don't know what a ship was doing when you were on her for six months?"

"I was never told, sir."

"But you must have supposed something?"

"Yes, sir."

"What, then?"

"If you please, sir, I'd rather not say."

"Why not?"

"I promised not to."

"And supposing Admiral Jellicoe should ask you?"

This was a poser for the boy, for it suggested at once that his questioner had the right to demand an answer. Yet Jed hesitated, and at last said, slowly.

"I think, sir, I should first ask the captain of the *King Stephen* to release me from my promise."

The Commander nodded in a satisfied manner and continued:

"I see that you have learned to say 'no' and that means much. I shall have to place you under arrest, nevertheless, for I should not feel justified in doing otherwise until I have communicated with the authorities."

"Please, sir," said the boy, "since I know about it anyway, would you mind telling me what the ship is for?"

The Commander pondered for a moment.

"In view of the fact that you undoubtedly saved the ship," he answered, at length, "your request is not unreasonable. Can you tell me what this vessel looks like at a distance?"

"The *Ajax*, sir."

"Exactly. She is a precise copy, even to the smallest outward detail. Yet, in spite of our warlike appearance, we have not a single real gun on board, not a shell, not a torpedo. That the hull is a very large one you can see for yourself. As a matter of fact, this ship was once a four-funneled North German Lloyd liner. She was captured during the first week of the war. Her four funnels were removed and two large funnels of the Battleship type substituted. Her three masts

were removed, and the present mast erected, with spotting top, aërials and so forth, exactly as in the *Ajax*. The superstructure was built in the same way. Of course, while it is of wood, the construction is very solid, for it might come on to blow hard while we were cruising, although we do not often leave port when there are indications of bad weather. Wooden though these details may be, I have reason to believe that the copy is exact. In your motor-boat, protecting this harbor, you have passed close to us a score of times. Have you ever suspected that we were not the *Ajax?*"[1]

"No, sir, never."

"Nor could an enemy, even at close range. What is more important, the deception is absolutely undiscoverable by a sea-plane flying overhead. When we are steaming in line of battle, I, myself, sometimes rub my eyes and wonder if it can be possible that the formidable-looking vessels following the flagship are dummies, even such as this. They call us 'The Suicide Fleet' because, if

[1] There has been much controversy as to whether this dummy fleet existed. The author desires to state that he possesses documentary statements from officials high in the British Admiralty that this dummy fleet was in existence, and served the purposes of the Royal Navy, for a period approximating one year, during the war.

any enemy vessel should dare to attack so powerful a fleet, every one of us would be sent to the bottom without hope of defense."

"But what's the use of it?"

"A very great deal of use," the Commander rejoined. "That is why the secret is so important. Perhaps you may have heard of the action off Dogger Bank, when the *Blücher* was sunk?"

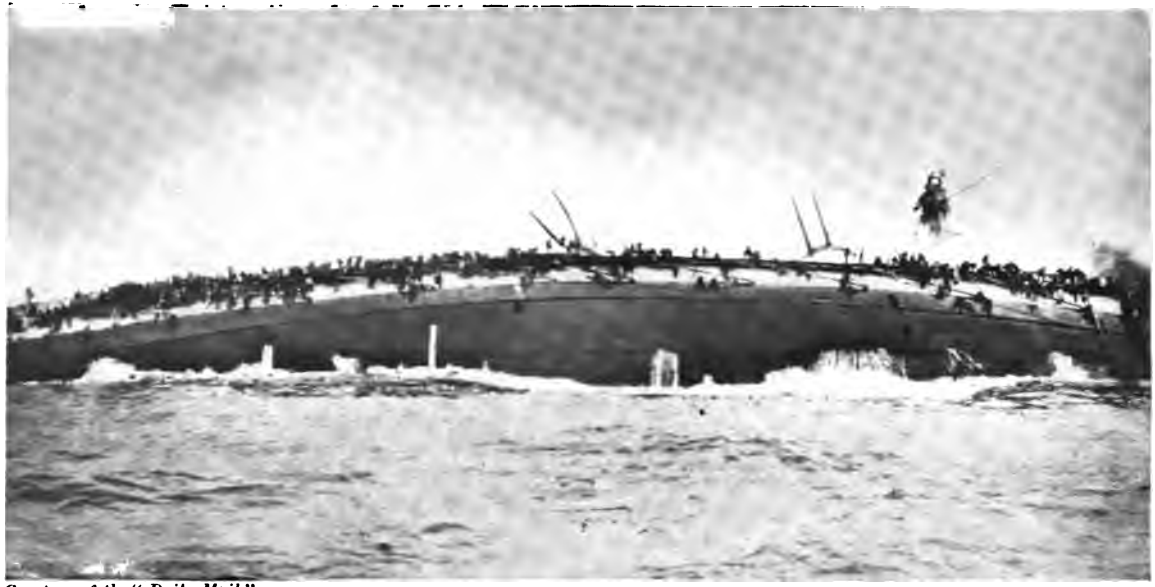
"Oh, yes, sir."

"And did you never stop to think how curious it was that the Huns should have come boldly almost to our shores, although the Cats were waiting for them in a small creek near Harwich?"

"Father spoke to me once about that, sir," the boy replied. "It did seem queer."

"Yet the explanation is very simple. We, this dummy fleet, with our fourteen vessels, were seen by a German sea-plane cruising three hundred miles to the north. This was taken as evidence that we were so far out of the way that it was safe to risk a dash across. Then, when the Huns fell into the trap, our Battle Cruisers closed down on them.

"Remember," he continued, "that the Germans cannot tell exactly how many ships we have, and they never can tell where they may be found Some-



*Courtesy of the "Daily Mail."*

**THE MOST WONDERFUL NAVAL PHOTOGRAPH OF THE WAR.**

This photograph, taken by a British naval officer aboard one of the rescuing boats, shows the sinking of the German Armored Cruiser *Blücher*, "just before she turned wearily over and sank." Her exposed side shows rents torn in it by the British shells, while the crew is seen, some huddled against the taffrail, others sliding down the side into the sea, others already in the water, their heads appearing above the surface. The guns can be noted pointing into the air. "When it was seen that she was doomed," writes an eye-witness, "the ship's bell tolled for church parade. Some of the men climbed up on deck through shot-holes, cheers were given for the *Blücher* and for the Kaiser, and we heard the roar of thousands of unconquered German voices singing patriotic songs as the ship went down."

times vessels of this dummy fleet are attached to Admiral Jellicoe's Grand Fleet, to release the real ships for occasional special services. A scouting German sea-plane would report that the strength of the main fleet was not diminished, yet suddenly two super-Dreadnoughts would turn up at some unexpected place and nip a dangerous German plan in the bud.

"We must have puzzled the German scouts almost beyond belief. From the point of view of their observations, either the British fleet must have fourteen more battleships than she was known to have—which is almost as much as the whole modern battleship strength of the German Navy—or our steaming speed must be incredible, for concentrations of ships would be seen within a few hours of each other at great distances apart.

"You see, if an enemy is afraid to face you, it makes no difference if your guns are logs of wood or whether they are the real thing. When a small fleet sees a big fleet coming, it escapes. That is not cowardice, it is good judgment. One of the principal uses of a battleship is its power as a threat. Now, with us, our coal consumption is but a trifle compared with that of real Battleships and Battle Cruisers. We have no need of the

enormous crews which form the complements of the ships we represent. The money expended to make us look like Battleships would not have built a single small Destroyer. Thus we are saving England millions of pounds by being a threat of equal efficiency to a powerful ship of the line at an insignificant cost.

"There have been a few curious incidents in our work. On one occasion, the government of the United States made a very stiff objection to the presence of a British warship, which was remaining too close inshore and making herself objectionable to neutral commerce." [1]

This time the Commander's stern expression relaxed.

"That was a dummy ship," he continued, "and there must have been some smiles in the Admiralty office when the official protest was made. That very vessel is in this harbor now.

"Again," he resumed, "you may have read in the papers, sometimes, that the Germans had reported that a flotilla of their Destroyers had seen a British battle squadron in the North Sea and that the big ships had run away."

[1] This was, of course, prior to the entrance of the United States into the war.

"Yes, sir," the boy replied, "I've seen that lots of times, but I always supposed that it was just a pack of lies put out by the Germans."

"It wasn't," answered the Commander. "The stories were perfectly true. But it was this dummy squadron which did the running away. Naturally. That was what we were for. It was above all things necessary that we should never expose ourselves to dangers, as, if even one of us were attacked, the whole plan would be made useless.

"Our value to Great Britain lies only in the utter and absolute silence in which the secret is kept. Not a man in this fleet has had shore leave outside this little reservation since the first day the fleet entered this port. You have learned the secret by hazard, and I am compelled to see that no loophole is left by which the information might leak out perhaps by inadvertence. I am going into this matter at some length, because I do not wish you to think that I am unappreciative of your services, nor that I am personally distrustful of your veracity. But the secret is in my keeping."

Jed thought for a moment and then, in spite of his predicament, the corners of his mouth twitched.

"Something amuses you?"

"I was just thinking, sir," said the boy, "how raging mad the Germans will be if they ever learn about the trick that's been played on them."

The Commander smiled assentingly.

"It is the greatest battle ruse that has ever been successfully carried out in the history of naval warfare," he said. "Not since the days of the Horse of Troy has there been anything to compare with it, either on land or sea. And it has been successfully carried out in spite of German spies, in spite of wireless telegraphy, in spite of Zeppelins and aëroplanes. The British Navy is not known as 'The Silent Service' in vain."

He leaned back in his chair, prepared to call to the guard outside the door.

"Just one thing more, sir, if I may ask," said Jed, eagerly. "What happened to that Hun?"

"You mean the German gunner who swam from a submarine somewhere outside the harbor and tried to blow us up? A couple of our men worked over him with First Aid and it has been reported to me that he is none the worse for your strangling."

"I'm glad," said the boy, "I really didn't want to drown him."

"It was a gallant deed on his part," said the Commander appreciatively, "and he will be well treated as a prisoner of war. Naturally, he has not been taken aboard any of the ships of the fleet. It is enough, and, I am afraid, a good deal more than enough, that one outsider has become possessed of the secret of the Suicide Fleet. I hope your arrest will not be of long duration."

"I hope not, sir," agreed the boy, "but it's almost worth the arrest to be the first American to learn the truth about the biggest bluff on record."

## CHAPTER IX

### THE ONE-EYED DEATH

JED's incarceration on the dummy *Ajax,* whose official name was *H. M. S. No. 1,* lasted less than a week. One of the senior officers of the flagship went ashore to the little tiny town which was the nucleus of the reservation and there met the skipper and the engineer of the *Garpike.* A report had also been received from the captain of the *King Stephen.* In course of time, and in recognition of the boy's services, he was released upon giving his word of honor never to mention to a soul what he had seen, until the British Admiralty itself should reveal the secret.

None the less, the lad was placed under the same restriction as the men of the suicide fleet. He was not allowed, under any circumstances, to go outside the reservation, and he was not allowed to write any letters or send any dispatches of any kind. An official dispatch was sent to his father,

however, stating that, in the event of non-receipt of communications from Jed he was "not to be unduly alarmed, as the aforesaid is on special service."

Although he had enjoyed his week's stay on *H. M. S. No. 1* tremendously, for the conditions of his arrest had been merely that he was under guard against the possibility of escape, Jed was glad to get back to the *Garpike.* He had been homesick for his engines. The engineer smiled when the boy told him this, but looked well pleased.

Never once, by word, look, or sign, did any one aboard the motor-boat comment to the lad upon his absence. Naturally, Jed said nothing. The boy never knew whether the rest of the men were aware of the truth concerning the great gray ships they were so sedulously guarding. When he remembered what the engineer had said to him, the day before they left the *King Stephen,* Jed was sure that the Scotchman knew. But whenever the Chief spoke of the ships, it was always as though they were indeed the super-Dreadnoughts they appeared to be. And the boy spoke of them in the same way.

For a few days, none the less, Jed was conscious of a certain reaction. He found it harder

to concentrate during his watch, now that he knew the vessels were a gigantic sham. The joke was a good one, but it seemed a fearful waste of time for high-grade motor-patrol-boats to be interminably on the watch in the protection of a joke.

The bigness of it, however, grew upon him gradually. As he settled into his routine work again and pondered over what the Commander had said to him, he began to realize that, as long as these dummy ships were satisfactorily menacing Germany, they were doing as much as the real ships. He began to see also, that, in their case, the patrol was even more important, for if a submarine should slip by the motor-boats, there would be no chance for the dummies to defend themselves with their minor batteries, for these, also, were of painted wood.

Moreover, it was rather a serious reflection upon the efficiency of the motor-boat patrol that a submarine should have been able to come close enough to the inner harbor to dare to rise to the surface with its conning-tower clear out of the water in order to let free the sailor who had swum to the anchor cable of *H. M. S. No. 1.* Jed learned that the captains of each of the four

motor-boats had received an official communication which made them very red and hot about the ears.

The boy's personal opinion was that the sailor had not set off from a submarine at all the night in question, but probably had been put on shore the night before and had swum during the evening only from the little point of land across the bay. Jed was unable to suggest this to any one, not even to his friend the engineer, however, for his lips were sealed to everything that had happened from the moment he dived off the motor-boat in pursuit of that mysterious object on the water.

Luck did not seem to be running the *Garpike's* way. The next submarine that took a notion to visit the harbor was spotted by one of the other boats. Her two periscopes were shot away, but, none the less she escaped.

"But doesn't a submarine sink, if her periscope is gone?" asked Jed of his chief.

"No," came the answer, "a man, even a one-eyed man, isn't killed if ye put out his one eye. He's blind, that's all, an' a soobmarine has two eyes. What's more, it's nae sae deeficult a job to put in a new periscope."

"Have most submarines two periscopes, then?"

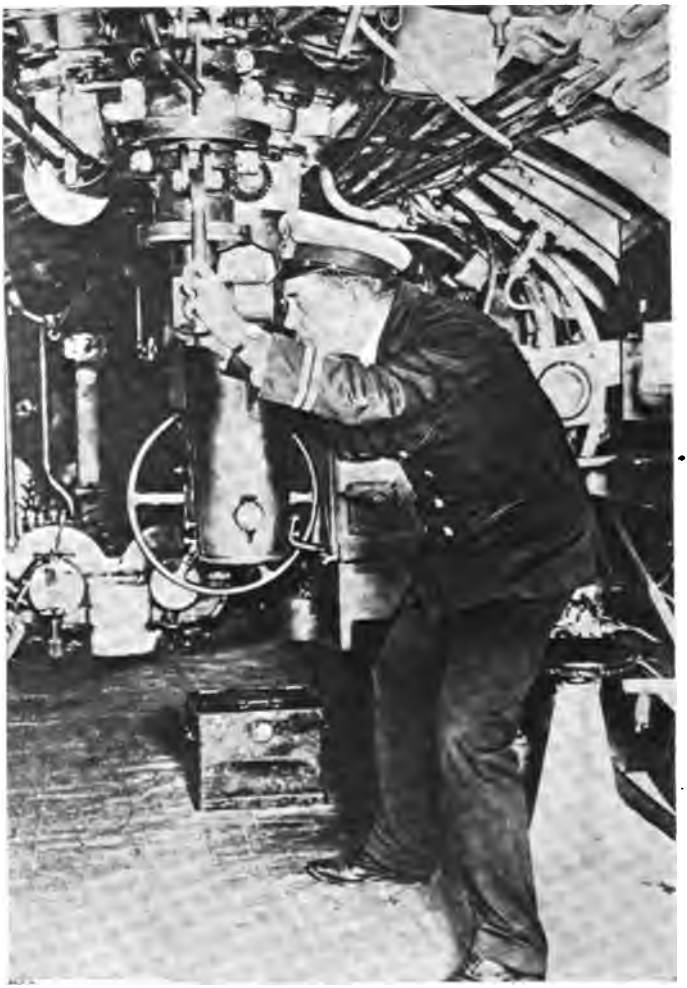
"Aye," said the engineer, "there's the short one, that's generally kept fixed straight ahead. That's for the steersman. An' there's the longer one, which turns round so that ye can see the whole o' the horizon, that's for the Commander. But the maist o' the big fleet soobmarines hae three."

"What's the third one for?"

"It's a zenith periscope," explained the engineer. "It shows the whole o' the sky overhead, an' sairves notice to a soobmarine to dive if there's a sea-plane flyin' by. Ye see, with the ordinary periscope, showin' only the horizon line, a soobmarine might come up right under an enemy sea-plane an' never know it. Then the pilot would drop a depth bomb an' Fritz would go tumblin'."

"A periscope acts a good deal like one end of a range-finder, doesn't it?" Jed asked.

"Oo, aye. It's just a set o' prisms arranged to act like mirrors. Suppose ye have a telescope an' gradually sweep it all round the line o' the horizon. That's what ye do when ye turn a periscope tube round. There's a lens like a telescope lens which takes in the object, throwin' it on a prism. This is thrown as a reflection on another prism.



*British Official Photo.*

"He Gets All the Fun!"

**The attack on an enemy war-vessel and everything connected with it is solely the Commander's affair. He is the eye, the hand and the brain of the submarine, this single figure at the periscope.**

The prisms at the top reflect down the tube to a mirror below, also of the prism type an' there's a little magnifier at the bottom like a small telescope which enlarges the image. Half way down the tube there's a thick plate of clear glass, fittin' the tube tightly, so that if the periscope is shot away, there'll be nae leak."

"But a submarine couldn't get back to her port in Germany under water, could she?" asked the boy. "With her periscope gone she couldn't see her way."

The engineer looked at the boy with such astonishment that his pipe nearly fell from his teeth.

"Dinna ye ken anything mair than that aboot a soobmarine?" he said aghast.

"I hardly know anything at all about submarines," Jed replied, humbly. "How would I find out? All I know is that a submarine is a small boat which can travel either on the top of the water or under the water, that when she is submerged she finds her way with a periscope. Most of them seem to be armed with a gun for use when running on the surface and with torpedo tubes to be used below water."

"If that's all ye know," declared the engineer, "it's no' muckle. Maybe I'd better add to that

information or ye'll be mistakin' a soobmarine for a whale some o' these days."

Jed waited patiently, knowing that the engineer would continue.

"As for bein' small," he began presently, "that all depends what ye call small. There's two types, coastal an' fleet. Coastal is anything under 500 tons' displacement, naval or fleet types are usually about 1,000 tons. The Huns have built 'em as big as 2,000 tons, but there's little to be gained by that. It's just the foolish Hun notion o' makin' a thing big, whether the increased size is an improvement or not."

"Is a big submarine of less use than a small one?" queried Jed in surprise. "I should have thought it was a lot more dangerous. It can carry more torpedo tubes and torpedoes for fighting under water, and heavier guns for fighting when on the surface. It can carry a bigger crew and I should think there would be more room for air for breathing when she was submerged."

"Whiles ye talk without thinkin', lad," said the engineer. "It's a bad habit. Try an' realize what ye're sayin'. The real purpose of a soobmarine in war is to slip along without bein' seen, to sink an enemy vessel if it can an' to get back

home again without bein' sunk itself. The bigger a soobmarine may be, the easier it is to see under the water. Just as it's hantle easier to see a whale than a herring. So it's easier to see a fleet type than a coastal.

"What's more, the bigger is an under-sea boat, the longer it takes her to submerge. One of the little 150-ton Dutch soobmarines can submerge and be out of sight in a minute and fifty seconds, that is housin' the gun, gettin' the crew below, closin' the hatch and disappearin'. A 2,000-ton craft will take every bit of four minutes and generally five. A Deestroyer rushin' along at more than half-a-mile a minute has plenty o' time to ram a big soobmarine, even if she were two miles away when first sighted, an' at more than two miles away, a torpedo aim is none too sure."

"But for long journeys under water," suggested Jed. "Wouldn't the bigger type of boat be the best for that?"

"How far do ye reckon a soobmarine could go under the water?"

"You mean without coming up to the surface?"

"Aye."

"A couple o' days, I suppose," hazarded Jed, "if she had air enough."

"Ye do? An' how fast could she travel do ye suppose?"

"Oh, ten or twelve knots."

"If ye'll design a soobmarine that can do that," said the engineer, "ye can ask as many millions o' pounds as ye'll ever be able to spend all your life long, an' any country will be glad to give it to ye.

"No, lad, whatever the soobmarine may be in the future, there's naething like that, noo. There are plenty o' different kinds o' soobmarines, just as there are different kinds o' bicycles, but the principles are much the same. One type may be a trifle better than another on some one point an' a trifle worse in another point. But the construction o' under-sea craft has reached a certain standard an' there's nae main differences.[1]

"To begin, ye'll hear o' 'single-skin' and 'double-skin' soobmarines. The Americans, English and Japanese, use the single hull; the French,

[1] The reader will understand that with any invention as newly developed as the submarine, and the secrets of which are as jealously guarded, there may be a discovery at almost any time which will revolutionize the construction of submarines. But the above description of the powers and limits of a submarine holds true for the American, British, French, Italian, Russian, Japanese, German and Austrian types as they were at the close of the World War.

German and Austrian use the double hull type. Other nations use a mixed type. But that really doesna make a great deal o' difference. The main variation is in the location o' the water tanks.

"Then ye'll hear about soobmarines an' submersibles as if they were gey unlike. There's little difference between them, now. The old idea was that a submersible could submerge on an even keel, but all the latest types o' submersibles find it is necessary to point the bows down for a dive. The soobmarines used to dive steeply, now they go down at a less incline. So, except for a strictly technical variation, there's nae sae much difference there.

"A soobmarine is built narrow an' thin, because, when it's submerged, it has pressure on every side an' it needs to be sharp to cut the water. Forby, it has to resist a tremendous pressure and must be narrow so that it can be strongly braced."

"How far down can a submarine go without being squashed in by the pressure of the water?" asked Jed.

"Two hundred feet is about the limit of safety in salt water," the engineer answered, "though

a hull might stand a great deal more. In general practice, safety appliances are set to work at eighty feet depth. Of course, details like that vary with every make."

"Does a submarine sink of its own weight, or does it dive down of itself?"

"A soobmarine can sink of its own weight," the engineer answered, "but it is very seldom done. Water is forced by powerful pumps into the ballast tanks until the weight o' the soobmarine is just a little less than that of water. Practically all o' the reserve buoyancy is taken up. It is then in what is called 'divin' trim.' The electric motors are started an' when the craft has a speed of 4 knots there is way enough for the horizontal divin' rudders to start it glidin' gently under."

"Then if it were not moving it couldn't sink?" queried the boy.

"No, savin' maybe in an emergency by usin' auxiliary tanks, which is no' safe, for it disturbs the balance."

"And the boat emerges the same way?"

"Aye, just the same, drivin' on wi' the horizontal rudders set for the rise. Small submarines can submerge an' emerge just by the use

o' the horizontal rudders aft, but the long hulls o' fleet submarines need two sets, one aft an' one for'ard."

"You spoke of electric engines," said Jed. "I thought submarines had gasoline engines! They make an awful racket when they're on the surface. I've heard them clearly, a couple of miles away."

The engineer fairly gasped.

"Losh, man," he exclaimed, "did ye think that soobmarines used gasoline engines when submerged?"

"Why not?"

"How long do ye think the air would last? A gas engine swallows air at a tremendous rate. Why, a gasoline engine powerful enough to drive a submerged soobmarine would use up all the air in the boat in about fifty seconds, or a minute an' a half at most!"

"Ow!" exclaimed Jed. "I'd never thought of that!"

"Besides," said the engineer, "think o' the danger o' havin' gasoline vapor in a steel hull where it couldna escape. Ye'd be havin' explosions all the while. Even when runnin' on the surface a modern soobmarine doesna dare use a

"Just how is a Diesel different from a gasoline engine?"

"Ye know," said the engineer, "how in the four cycles of a gasoline engine, gas an' air is admitted in the first down stroke o' the piston, the up-stroke causes the compression, the electric spark from the spark plug ignites it, drivin' the piston down, and the fourth up-stroke drives out the gases?"

"Of course," said Jed.

"Well, in the Diesel engine, in the first down stroke, air only is admitted into the cylinder, an' the up-stroke compresses that air to such an extent that it is raised to a temperature of 1000° Fahr. Then a jet of crude-oil spray is admitted which is ignited by the heat of the air, drivin' down the piston, an' the fourth up-stroke drives out the consumed gases as usual. But the Diesel couldna be used when submerged, for the same reason as the gasoline engine is impossible, it would use too much air. Forby it would make too much noise, an' sound waves travel far under the water."

"Then the Diesel engines are used only on the surface, and electric engines below?"

"Aye."

"Those motors must get their power from storage batteries, then," suggested Jed.

"Precisely. Generally the usual kind of lead cells are used, with lead peroxide for the positives an' spongy lead for the negatives in dilute sulphuric acid. Different types o' craft use different batteries."

The boy thought for a moment, wrinkling his forehead.

"But if the engines below are worked by storage batteries," he said, "I don't see how a submarine can run for a long time below the surface without recharging."

"It canna," replied the engineer. "As a general average, the best o' them canna run submerged for more than twenty to twenty-four hours at the minimum speed o' four knots. The air will last about that long, too. Of course, with compressed air, ye could stay under a longer while, but there's no great gain in that, since ye hae to come to the top, anyway, to recharge the batteries."

"And that's done by the Diesel engines?"

"Aye. Ye see, the Diesel engines, the electric motors an' the propeller are all on the one shaft,

with special couplings, so that the shaft may be driven either by the engines or the motors. Besides, the three o' them may be coupled together, when runnin' on the surface, so that the engines may be drivin' the soobmarine ahead an' at the same time they may be drivin' the motors as dynamos to recharge the batteries; or the Diesel and the motors may be connected an' the shaft disconnected, so that the batteries may be recharged when the soobmarine's at anchor or at a dock, or beside the mother ship."

"And how long does it take to recharge the batteries?"

"From four to five hours, generally."

"You mean," said Jed in surprise, "that for every twenty-four hours of running, a submarine has to spend at least four hours on the surface?"

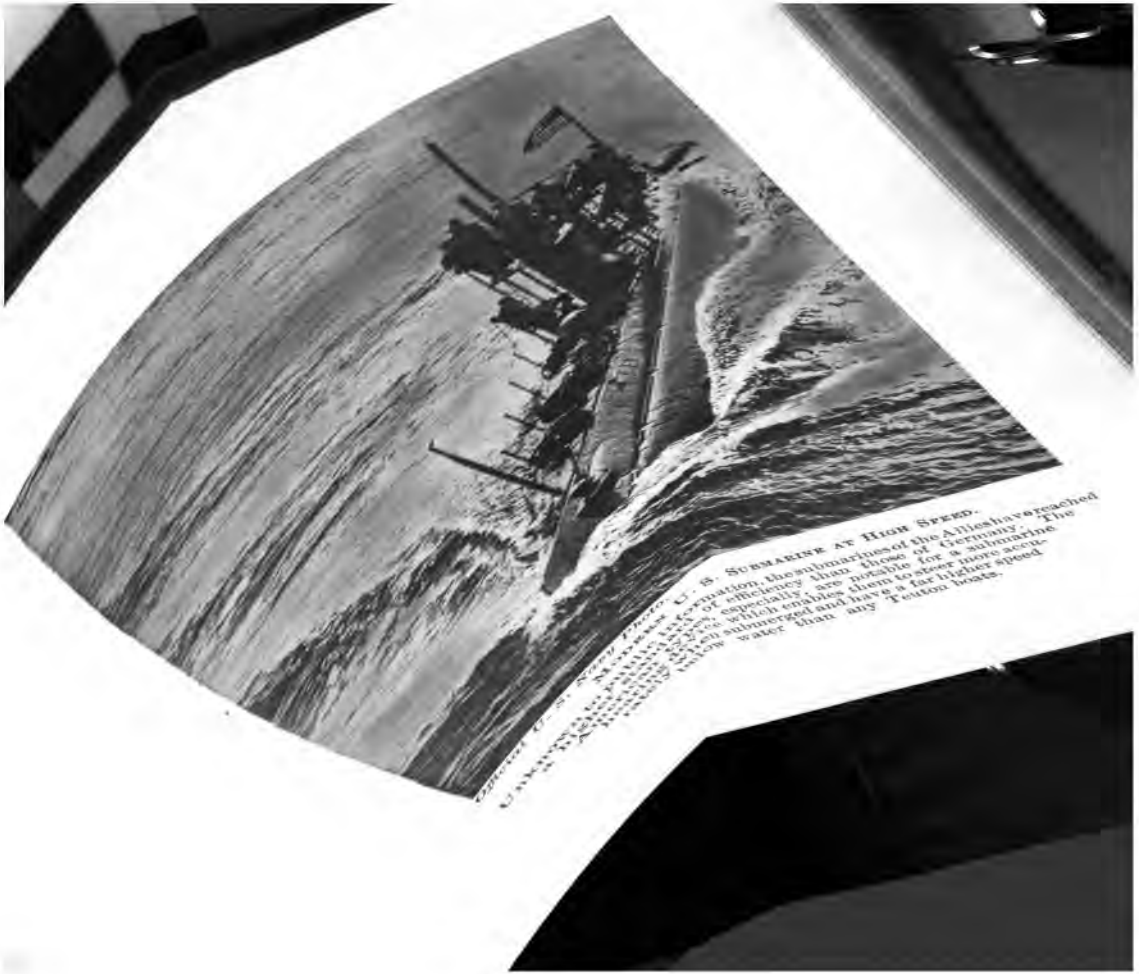
"Aye, just that."

"And that's not merely putting the periscope out of water, but coming right up, conning tower and all?"

"Precisely."

"And the cruising range below water is less than a hundred miles, you said?"

"For practical purposes, a great deal less than that. I said, at a minimum speed of four knots



Copyright U. S. Navy Photo. U. S. Submarine at High Speed.

Unknown to public information, the submarines of the Allies have reached a higher standard of efficiency than those of Germany. The Americans, especially, are notable for a submarine [illegible] which enables them to steer more accurately when submerged and have a far higher speed [illegible] below water than any Teuton boats.

a soobmarine can stay below for twenty-four hours. But, ye know, a storage battery isn't like a gas engine. When ye start to hit power out o' her, she gives up current fast. Suppose ye try to get twelve knots out of her—which is nearly the limit for the average modern soobmarine—the batteries won't hold out for more'n an hour. A soobmarine that can get fifty miles away from the spot where it has torpedoed a neutral merchant vessel or a Red Cross ship is doin' well."

"I see now," said Jed, "why the submarines haven't tried to attack any of the main fleets. With 30-knot destroyers and 100-miles-an-hour sea-planes on the watch, a radius of fifty miles from the fleet could be guarded so closely that the submarine wouldn't have much chance to come up."

"It could come up," the Scotchman answered, "but that's no' sayin' for how long. Suppose it got up for as long as an hour before bein' seen, durin' that time it would only have had time to give a quarter charge to its batteries, an' fill only a quarter of its compressed air chambers. Then it could only go down for a very little while an' couldn't go far. Sea-planes would be hoverin'

over it wi' depth bombs, Destroyers an' Light Cruisers would be waitin' with guns all ready pointed. If it were night, the sea would be a blaze o' searchlights. Fog is really its only chance of escape."[1]

"But if it came to the surface, couldn't it escape from a Destroyer by speed? I should think a long thin fish-like thing like a submarine could travel on the surface a lot quicker than a Destroyer!"

"Dinna ye think it for a minute!" replied the engineer. "Ye know, for I've told ye a hantle o' times, that power varies as the cube o' the speed. It takes eight times as much power to go twice as fast an' twenty-seven times as much power to go thrice as fast. There's another thing, too. Diesel engines to produce great power must hae great weight, an' great weight requires great buoyancy. Buoyancy requires size, an' size, again, produces greater resistance in the water,

[1] This is the explanation of the success in the transportation of American troops and supplies at the end of the war. The convoy system operated to perfection, not necessarily because of the skill of the gunners on ships of the fleet or attached to the fleet, but because it was almost certain destruction for a submarine to be sighted by a number of vessels. One ship, alone, can be torpedoed with reasonable ease.

which more than counteracts the gain in speed from the heavier engines. No, ye must no' think of a soobmarine as bein' a fast craft. As yet, it's very slow an' very impairfect.

"Forby, a soobmarine is deeficult to build. There are few engineers that are competent, an' fewer workmen. At eight hours a day, it takes from twenty-two to twenty-four months. Wi' three shifts ye can do it in nine months. So that these stories ye read in the papers o' the Germans buildin' two a week, is nonsense. If they were launchin' one a week, that would mean thirty-six soobmarine plants workin' three shifts a day.

"Moreover, in proportion, a soobmarine is a hantle mair expensive than any surface craft. They're no' big, as I've been tellin' ye, an' a soobmarine o' average size will cost a hundred and twenty-five thousand pounds an' mair."[1]

"There was one thing I didn't quite understand," responded Jed. "You spoke about the need of compressing air when on the surface and

[1] These figures are based on cost of materials and of labor before the war. Of course, the cost would be higher in the United States because of the larger wages paid, and lower in Russia and Italy, lowest of all in Japan. A figure of $1,000 per ton displacement in European yards and $1,250 per ton of surface displacement in American shipyards would be approximate.

said that it would take four or five hours. Is that the air for breathing?"

"No," the engineer replied. "There's no need for compressed air for breathin'. There's enough air in a soobmarine for the crew. Ye see an ordinary fleet soobmarine o' maybe eight hundred tons, will carry three officers an' twenty-one men. That doesna take sae much air. Forby, there's always a little air leakin' from the compressed air flasks, for when ye have an air pressure o' 2500 pounds to the square inch, there's no valve made that can be absolutely air-tight. The compressed air is used for pumpin' water into the tanks when a soobmarine wants to submerge, an' for firin' off the torpedoes."

"Pumping the water in? I should have thought that you'd let the water run in, and then pump it out to rise again."

"Ye hae not the principle richt," responded the engineer. "When a soobmarine is on the surface, the main tanks are full of air. Noo, wi' powerful pumps, the water is forced into these tanks, thus compressin' the air that is in them already. As I told ye, this doesna quite sink a soobmarine, but takes her down awash, in divin' trim, an' the divin' is done by the forward speed

an' the inclination o' the horizontal rudders. When the soobmarine rises to the surface, the air which was compressed in the tanks blows the water out, when a valve is opened."

"That's it," said Jed, "I begin to see the idea, now."

"It takes a hantle o' tellin'," grumbled the engineer. "Ye should hae been able to think that oot yourself."

"But I don't yet see how a torpedo is fired off below the water. I should think that when the door of the tube was opened to let the torpedo out, the water would come in."

"Ah," said the engineer, "maybe that does need some explainin'. Yet the principle is simple, after all. There is an outer door in front o' the torpedo tube an' an inner one behind it. The outer door is shut. The crew take a moldy an' slide her into the tube, close the tube, an' connect the compressed air. The inner door is then closed. Then, from a tank, special for the purpose, the space around the torpedo tube an' torpedo is filled with water. The other tanks are trimmed so that the balance fore and aft is no' shifted. Then the outer door is opened an' everything is ready.

"When the Commander is ready to fire, he presses an electric contact, which releases compressed air behind the torpedo, an' the steel shark is shot out o' the tube with an initial speed o' thirty knots. As it passes from the tube, a mechanism for the purpose engages a lever on the torpedo an' starts the engines inside, which can run her for several miles at the same speed.

"Ye want to remember," he went on, "that a torpedo is not a projectile fired from a gun, but a little automatic soobmarine, speedin' through the water on its own power, which is generally compressed air. A pressure gauge automatically keeps it at its proper depth, and a gyroscope with a relay ensures that it runs straight. Ninety-nine times out of a hundred a torpedo runs true, but the hundredth time it will go completely mad. Maybe it'll fail to steer an' will go round in circles like a kitten chasin' its own tail. There was a Deestroyer once that nearly had spasms, dodgin' one of its own torpedoes which seemed to think itself a boomerang. Once in a long while, something will get jammed an' the moldy will frolic on the top o' the water like a flyin' fish, or try to make a hole in the bottom o' the sea. But, considerin' there's no one aboord to steer them,

regarded as an automatic soobmarine, the torpedo is nearly pairfect."

"How can a gyroscope keep a torpedo straight?" asked Jed, frankly puzzled. "I thought a gyroscope was a little leaden wheel used for a toy. I had one as a kid. When it was spinning fast you could put the frame on its side, or upside down, or any how, and it wouldn't fall. I never knew just why, though. But I don't see what that has to do with a torpedo."

"If ye want to ken all aboot a gyroscope, lad," retorted the Scotchman, "ye'll be studyin' that an' that alone for the rest o' your natural life. 'Tis a weird an' complicated thing. To put it as simply as I can, I'll just say that a gyroscope acts on the principle that a rotatin' body will not alter the direction in which its permanent axis points. This direction of a rotatin' body is not in relation to the earth, but in relation to space. With a light relay—concairnin' which I'll no' trouble ye now—it will hold the rudder of a torpedo straight.

"Forby, a gyroscope can be used in studyin' the stars. If ye point the axis of a gyroscope to any star, it will follow the movements o' that star as the star changes its direction to the earth.

That's the principle which is used in the gyroscopic compass. The axis o' the spinnin' wheel is pointed to the north star, so that it spins at richt angles to the revolution o' the earth an' stays put. The advantage o' that, in a soobmarine, where the steel hull would cause serious derangements o' the magnetic compass, is enormous. The Earth itself is nothing but a big gyroscope, an' that helps to keep it true in its place in the Solar System."

"But even with every kind of safety device, there must be lots of submarine accidents," suggested Jed.

"Very few," the engineer answered. "The reserve buoyancy of a soobmarine is 25 per cent., so that if, in shoal water it should strike a rock —which is doubtful in itself, or, if it did, it might simply bounce off—or if it should strain its plates an' begin to leak, which is more probable, it would have plenty of time to come to the surface. Of course, in war, a shell-hit when submergin' or a depth-bomb-hit after bein' submerged would make so big a hole that the under-sea craft would have no chance.

"In general, a soobmarine below the water is very safe. It can't stay down very long, that's

all. These stories o' undersea trips from Hamburg to New York are just fairy tales, as yet. An' even if a soobmarine sinks, there's ways to escape. One o' the most famous cases of escape was that of a stoker petty officer, trapped in a soobmarine. I hae the official report in my cabin. Wait a minute till I get it."

He returned a moment later.

"Here," he said, "your eyes are younger than mine. Read it, an' I'll explain what ye don't understand."

Jed took the crinkled paper and began to read:[1]

" 'At 10:30 A. M. on Tuesday, something was heard to contact with the boat forward, twice in quick succession. The engine-room telegraph rang to "Out clutches!" I took out the port clutch and then closed the muffler valve when it was reported that the ship was making water. I proceeded forward to ascertain the position of the leak. Finding no leak above the battery board, I came to the conclusion that she was holed low down.' "

[1] From the "Fighting Fleets," by Ralph D. Paine (Houghton, Mifflin & Co.). Mr. Paine states that he had access to the records in the British Admiralty. The author has not changed the language but left it in its technical form, as a historic document of the utmost importance and interest.

"Ye see," put in the engineer, "either the craft, while under water, ran into something solid like a sunken derelict, or she may have been hit in the bow by another soobmarine."

Jed nodded, and continued:

" 'My first impulse was to close the lower conning-tower hatch and get air pressure in the boat, but the men were then going up the conning-tower in the hope of escape. At this time, S——, an artificer, spoke to me and asked me my opinion. I replied that we might have a chance if we could close the hatch and get some pressure into the boat. He thereupon stood by the air valves and asked if all hands were out of the engine-room. I replied that I would find out.' "

"Do ye mark the coolness o' it all?" said the Scotchman. "Fathoms deep in the sea, the lights flickerin' an' the water risin' slowly wi' no way to get out!"

" 'On going aft,' the boy read on, 'I found one man coming forward and I ordered him to put on a life-belt and keep his head until he could get a chance to climb up the conning-tower hatch. Finding nobody else, I went forward and put on a life-belt, then went back and closed the valve in the air trunk through the engine-room bulkhead,

*Courtesy of "L'Illustration."*

**The Depth Bomb. A Submarine's Death.**

Result of the explosion of a bomb dropped by a hydroplane. Hydroplanes, dirigibles, destroyers and motor-boats are provided with these engines of destruction. Within a radius of 27 yards, the plates of a submarine's hull are torn apart and it sinks. A submarine once sighted in the open sea is as good as finished, for it cannot travel fast under water, cannot sink out of sight indefinitely and cannot escape these depth bombs dropped from immediately overhead. The submarine has no form of protection from this form of attack, and a patch of oil and floating bodies tell the fatal end.

as at this time I thought I might have to use the engine-room as a way of escape.

" 'I then returned to try and close the lower conning-tower hatch, but, before I reached it, the water began to come down through it and the engine-room bulkhead scupper, so I shouted to the men forward to come aft to the engine-room. There was no response. Repeated efforts—' "

"Do ye mind that!" interrupted the engineer. " 'Repeated efforts.' I'm wagerin' there was some magnificent trials o' rescue that he says nothin' aboot."

" 'Repeated efforts,' resumed Jed, 'brought no reply, the midship compartment being in darkness and partly flooded. Therefore it was impossible to discover if there was any one alive. Beyond a low moaning, there was no sound.

" 'It was impossible for me to leave the door, as it would have closed behind me and I could not have opened it again because of the increase of pressure in the flooding compartments. I remained there, still hoping that some of the men might come aft, until the water rose eighteen inches above the sill of the door and chlorine gas began to come through from the midship compartment.' "

"Ye see," explained the engineer, "the leak was for'ard an' there was a wrench amidships as well. The bulkhead between the engine-room aft an' the for'ard part of the boat would be water-tight, an' that would give him time to think, at least."

"'I was then reluctantly forced to close the door and proceeded to unscrew the slips of the torpedo hatch above me—' What's the torpedo hatch, Chief?"

"The hatch through which the torpedoes are lowered when they're loaded on board, o' course."

"Oh, yes, of course; . . . 'the clips of the torpedo hatch above me as the only hope of escape through the deck. At this time the engine-room was in complete darkness with the exception of the port pilot lamp which appeared to be burning through a short circuit.'"

Jed stopped for a moment thoughtfully.

"I see it all right so far," he said, "except for the chlorine gas. Where did that come from?"

"From the sea-water, which contains chlorine salts, released by electrification, probably," the engineer replied. "It takes only a little chlorine

to be injurious. It's one of the 'poison gases' used by the Hun."

"All right," said Jed, and proceeded to read. " 'The water was slowly rising in the engine-room through the voice pipes, which I had left open to relieve excessive pressure on the bulkheads. I then disconnected the torpedo hatch from the gearing, which necessitated the removal of two split pins and the two pins from the links. Before the foremost one could be removed, however, I had to unship the strong-back and wait until there was enough pressure in the boat to ease off the hatch.' "

"Let's see if I have this right," put in the boy. "Because of the pressure of the water overhead, on the hatch, he couldn't lift it himself. Therefore he figured on letting in water into the engine-room, which would compress the air remaining in it to such an extent that the force of the imprisoned air would act upon the hatch against the force of the pressure of the water on the outside. Is that right?"

"Precisely," agreed the engineer.

"Then I'll go ahead."

He resumed the narration.

"'The heat at this time was excessive, and therefore I rested awhile and considered the best means of flooding the engine-room, and eventually came to the conclusion that the best way was to flood through the stern tubes or the weed-trap of the circulating system, or by dropping the exhaust and induction valves and flooding through the muffler valve. I tried the stern tube first, but could open neither rear door nor stern cap.

"'I then came forward to the fore part of the engine-room and considered the problem once more. While passing over the switchboards, however, I received shocks owing to the water from the voice pipes running over them and onto the floor.'"

"They must hae been gude strong shocks," remarked the engineer, "there's nae sayin' what cross circuits there may not ha' been. There's a hantle o' current in a soobmarine."

"'I then came to the conclusion,'" read the lad, "'that the next best thing would be the weed-trap, so I went aft, but could not get back the butterfly nuts, as the weed-trap was in an awkward position and the water was pouring down on top of me.'"

"I'll explain to ye all that middle part, ye dinna

need to read it," said the engineer, stopping the boy in his reading, "for it's a gude deal aboot things that couldna be done. Although stunned by the electric current an' half-poisoned by chlorine gas, he tackled the exhaust an' induction pipes, but found that the water in the boat was already compressin' the air an' that the torpedo hatch was liftin'. He dived under water an' eased the wheel o' the gearin', an' as he says, 'arrived at another conclusion.' Read on from there!"

He pointed to the beginning of a paragraph lower down.

" 'I have always held the theory,' " continued Jed, reading from the official report, " 'that the pressure in a sunken air-locked vessel can be greater than the external pressure, the deciding factors being the weight and shape of the sunken hull. I now discovered that the boat was flooding very slowly, and I decided as a last resort to open the scupper in the engine-room bulkhead. I anticipated chlorine gas generating from this water, which proved to be the case.' "

"In other words," came the accompanying explanation, "findin' that he couldna open valves leadin' direct into the sea, this chap opened the scupper leadin' to the for'ard part of the boat

which was flooded. This wasna as good a plan, as ye'll see in a minute, but it was all he could do."

" 'Also,' " read the boy, " 'as the water came in, the air was escaping through the hatch.' "

"Mind ye," put in the Scotchman, "this was bad. If he could ha' opened direct contact with the sea, the pressure would ha' been immediate an' would ha' blown the hatch clear off. The water comin' in through the bulkhead leading to for'ard, the pressure was a lot lighter, like as if it were comin' through a lock. Read on an' ye'll see. Repeat that last sentence."

" 'Also, as the water came in, the air was escaping through the hatch. So I tried three times to open the hatch and succeeded in raising it about half-way, but the air rushed out and the hatch fell down again.' "

The boy looked up in a puzzled manner.

"Like steam in a kettle," the engineer explained. "When a kettle is boilin' hard, the lid lifts and lets a little steam out and then shuts again. In order to blow the lid of a kettle clear off, it would have to be fastened shut (supposin' the spout was stopped up) until there was a heavy pressure o' steam. Then, if ye could suddenly unfasten it from the inside, it would be shot

off with a bang. That's exactly what this fellow was tryin' to do. Ye'll see."

" 'So,' " read on Jed, greatly interested in the story, " 'I dived down under water and retrieved the clip bolts (which he had knocked off earlier and thrown on the floor, where they were covered under water now several feet deep) and shipped two of them and lightly secured them to the end of the dogs, the idea being to get sufficient pressure in the boat, then knock the bolts away, hoping to be blown out by the pressure.

" 'I then proceeded to put this idea in execution. The hatch flew open, but there was not enough pressure to blow me out, nor yet time for me to escape before the heavy hatch came down again. I tried once more to lift the hatch with my shoulder, but it descended upon my hand. I managed to raise the hatch and free my hand, which was quite badly crushed.'

"Oh! What hard luck!" exclaimed Jed. "After all that work!"

"Read on," said the engineer.

" 'I now concluded,' " the boy continued, " 'that it was impossible to attempt to blow myself out by means of internal pressure.'—I don't see why, Chief?"

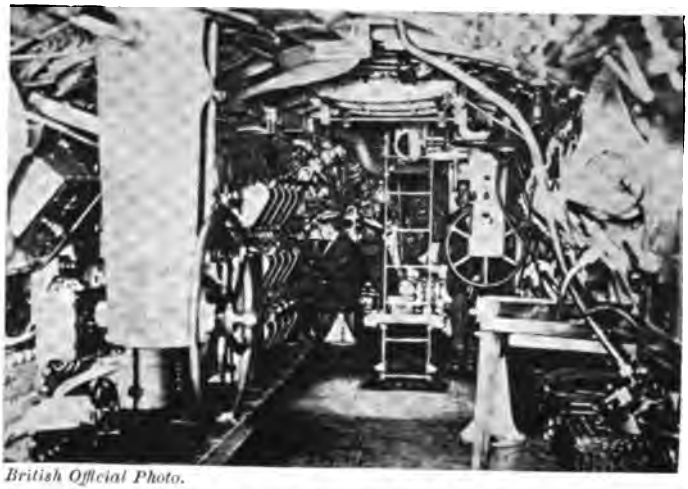
The engineer smiled.

"I was wondering if you'd notice it. Because, Jed, lad, the analogy is no' just the same as yon kettle. The weight o' the air pressin' down the lid o' the kettle is as naething to the pressure o' the steam on the inside. In yon soobmarine, the weight o' the water pressin' on the outside o' the heavy hatch was almost as great as the pressure o' the imprisoned air within. So the hatch would lift on one side an' clap to again. If the stoker lifted it, on his shoulder, as he did, it was because of the air inside helpin' him. But the second it was opened, even a crack, a great bubble o' air would burst out, reducin' the pressure inside an' makin' the pressure outside harder, or heavier if ye like. That was how his hand got crushed."

"Then his whole plan didn't work? He couldn't do anything?"

"His plan didna work," the engineer agreed, "but that's no' to say that he couldna do anything more; on the contrary, he set out to think of another plan. Hear him tell it!"

" 'I now concluded,' " read on the boy, " 'that it was impossible to attempt to blow myself out by means of internal pressure. Therefore I



*British Official Photo.*

INSIDE THE ONE-EYED-DEATH.

The interior of a British submarine, looking aft, showing part of the engines and machinery.

*British Official Photo.*

**STEEL SHARKS AWAITING THEIR PREY.**

**Bow view of the same submarine, showing torpedoes ready for launching from their tubes.**

knocked the dogs off the deadlights and allowed the boat to flood as quickly as possible, with the idea of flooding the engine-room completely and then raising the hatch and escaping.' "

"By which new plan," the engineer explained, "the water pressure inside the boat would be the same as that outside, so that the hatch would have only its own weight. The danger, of course lay in the fact that if it didn't work out exactly he would be drowned like a rat in a trap."

" 'I allowed the engine-room to flood until the water was up to the coaming of the hatch. (Which meant that he was just at the point of being completely submerged in water and drowned.) I then succeeded in raising up the hatch and escaped, rising to the surface and finally being picked up by one of our Destroyers.' "

"Aye," said the engineer, "and read that slip which I've pasted on the back o' the report. It's no' often that the Admiralty ever shows any real feelin', no matter how much they hae."

" 'Although the man was fighting for his life,' " read Jed from the Admiralty report, " 'it is an extraordinary example of unfaltering courage and perseverance and of refusing to acknowledge defeat. He was alone, in almost complete darkness,

receiving electric shocks, and, towards the end, suffering from the effects of chlorine gas and a badly crushed hand, and yet, in spite of continual disappointments, he worked on for nearly two hours, keeping his head to the last, and at the seventh attempt at opening the hatch he succeeded and escaped.' "

"Aye," said the engineer, when the boy had finished, "ye'll no' find a mair wonderful story of presence o' mind than yon. Forby, when one soobmarine finds another below the surface there's doin's."

"Couldn't one submarine fight another below the water?"

The engineer shook his head.

"I'll no' say that it's impossible," he answered, "but it's main deeficult to ficht something ye canna see."

"But the periscope is still acting," protested the boy, "why can't one submarine see another, like looking through a glass-bottomed boat?"

"Ye canna see through water," was the response, "even in the clearest water in the world, sixty feet is the limit, an' in shore waters or the North Sea, perhaps twenty feet would be the limit o' vision. Twenty feet of North Sea shore water

will have an inch o' mud in it, an' we hae no system yet which will allow us to look through an inch of—"

"FULL SPEED AHEAD!"

The excited roar filled the air and the telegraph clanged stridently.

"PERISCO—"

At the same second:

"R-R-RAP!" from the gun.

The exhaust went mad with noise as the engineer, with movements as quick as those of a professional magician, threw everything in.

The motor-boat whirled round so fast that it was like the pirouette of a dancer, and before Jed realized the speedy maneuvers, there came a loud, strident rasping:

"CL-SH-SH-SH!"

The motor-boat heeled over as her reinforced bow shore through something which resisted and tore with a tearing sound that seemed to fill the air.

The bow buckled, the gun lobbed over from its socket and the deck-plates telescoped on each other.

The speed was jumping, as the engines whirled into their highest speed, but minute by minute,

almost second by second, the bow of the motor-boat drooped and sank, showing that she was going right down by the head.

Jed felt an almost uncontrollable desire to break away and get on deck, even though the deck was only two or three steps away, but he battled with himself. His post of duty was the engines.

Down, down she pointed. Even the engineer began to grow worried, not because of himself, but because a few inches more inclination would throw the propellers out of the water.

The telegraph bell rang:

"STOP!"

The roar of the exhaust ceased with a suddenness that was more deafening than the noise, and, almost at the same moment, the boat struck something with a dull thud, ground through and on, and finally stopped with a jolt that seemed to jar Jed's teeth loose, but with her bow as much higher than the stern as it had been lower a few seconds before.

The engineer looked his engines over, then stepped out on deck.

"That's what I thought he'd done," was his only comment.

The *Garpike* was hard and fast aground, hav-

ing run full half her length on the beach from the terrific force with which she had struck.

The skipper's voice, shouting something in German, caused the boy to turn and look. The officer had a revolver in his hand.

In the water, perhaps a quarter of a mile away, could be seen the head of a swimmer.

"Bang!" the skipper punctuated his advice with a shot in the air.

Jed turned an enquiring look on the engineer.

"I dinna ken German weel," the Scotchman answered, "but I think he's makin' a bit suggestion to yon Hun that if he comes ashore here he'll be weel treated as a prisoner o' war, an' if he doesna, he'll be payin' a visit to his friends in their little soobmarine now tucked away cozily at the bottom o' the sea."

"Did we sink one?" cried Jed excitedly.

"Aye," said the engineer, "there's one craft o' the 'One-Eyed-Death' fleet that'll never murder defenseless women an' children again."

## CHAPTER X

### PHANTOMS OF REVENGE

THE German swam inshore slowly. He swam well, but it was evident that he was in doubt as to the character of his reception. On reaching shoal water, he did not put his hands above his head in the customary "Kamerad!" way, but slouched forward with uncertain steps, rubbing the water out of his eyes, watching narrowly the skipper, who still held his revolver in his hand.

The captain of the motor-boat addressed him sharply in German.

"I speak English, sir," the man replied. "Yes," he continued, in answer to the question that had been asked, "I have come from the under-sea boat."

"How is it that you speak English? Have you lived in England?"

"No, sir. I had an electrical repair shop in Chicago before the war broke out."

"You surrender, of course?"

"Sure!" came the immediate reply in American idiom.

The revolver disappeared at once.

"I will take your report," came the next command, and the lieutenant led the way to a piece of rock, and, sitting down, commenced to take notes of the man's story. Jed stayed near the boat, beside his Chief.

After a few minutes the officer raised his voice:

"Smithers!"

"Sir?" replied the gunner, stepping forward and saluting.

"Semaphore to the flagship that we have sunk a submarine and will report fully later."

"Aye, aye, sir."

The bluejacket stepped to the edge of the water and began gesturing with his arms.

As the lieutenant had supposed, the attention of the officers of the flagship had been attracted by the report of the gun and the subsequent demolition of the submarine.

Presently the bluejacket turned round and saluted.

"Well?"

"He says: 'Await your report,' sir."

The lieutenant nodded, then, slightly raising his voice, he said:

"This is a curious story, Chief!"

The engineer, following the suggestion, crossed the few feet of shingle and stood beside the skipper. From where he stood, Jed could hear most of what was said, though now and again, when the prisoner dropped his voice, he missed a word or two. Naturally, he did not show by sign or movement that he was listening, for the affair was none of his; on the other hand, there was no compulsion on him to walk out of hearing.

"You can continue," he heard the lieutenant say curtly to the German sailor.

"As I was sayin', sir," the other continued, with scarcely a trace of German accent, "when I got back to Hamburg they put me at first in the submarine yards because I knew somethin' about electricity. After a few months of this I was sent on board one of the new under-sea boats. We didn't do much at first, just torpedoed or shot down a few trawlers an' drifters, mostly drifters. It was easy at first, an' then the trawlers took to carryin' a gun, which made it bad. You couldn't tell which ones were armed an' which weren't. It was one of them that did

for us. We were cruisin' in pairs an' the other under-sea boat hailed a trawler, made the crew get into the boats, boarded an' sent it down with a bomb. It went quite slick.

"Seein' this, we didn't bother much, but ran up close alongside an' told the skipper of the other trawler to leave his ship. He talked back real nasty an', as he deserved, our commanding officer ordered us to turn the machine gun an' sweep the trawler's deck. The instant we opened fire, a part of his bulwarks swung back an' he opened fire on us. We submerged at once but were hit several times. The conning-tower was all blown to pieces an' one of our men was so badly wounded that he died that night. One of our fuel tanks was hit, so that we couldn't get back to port in Wilhelmshaven until the next day."

"Ye'll obsairve, sir," interrupted the skipper, "that a patch o' oil on the water doesna always show that a submarine has gone down."

"No," the lieutenant agreed. "If every submarine had been sunk that trawlers, merchant skippers, and our own fellows had reported sunk, there wouldn't be any left. Go on," he added to the German.

"I was then transferred to a large under-sea

boat," the German continued, "for the destroyin' of commerce. We had thirty men on board. I was in her four months, an' in that time we torpedoed four steamers an' blew up three others, one a sailin' ship."

"How about rescuing the survivors?"

The German looked uncomfortable at the question and his eyes looked shiftily.

"They always were given enough time to take to the boats, sir," he replied.

The English lieutenant nodded grimly.

"Of course," he said, "you'd have to say that. You never heard of the *Lusitania*, or the *Arabic*, or the *Falaba*, or hospital ships, I suppose?"

"No, sir," the German declared stoutly, "I never did."

Which was a palpable falsehood, but practically the only reply a German could make under the circumstances.

"That wasn't the submarine we sent to the bottom just now?"

"No, sir. This last was a small one, coastal type."

"Why did you leave the larger one?"

"She was hoodooed, sir," the German answered, and Jed started with surprise at the American

*Courtesy of "L'Illustration."*

**Sunk by a Steamer's Paddles.**

**German submarine, having miscalculated its distance and coming up to see the whereabouts of its intended victim, rises directly under the steamer, an old paddle-wheel type, and is smashed under the revolving wheels.**

idiom. "After the last steamer we had sunk, things began to happen queerly. We would see a steamer, or a sailin' ship, an' submerge. Then we would come up again, close to it, the Captain would get the range clearly in the periscope an' we would fire a torpedo. When we came up again, a minute or two later, the ship would be gone."

"So soon?"

"Yes, sir."

"That was strange," said the English officer, musing.

"Yes, sir, but what was stranger was that we never saw any wreckage, not even a splinter of wood."

"H'm. That happened more than once?"

"Several times, sir."

Quoth the Chief:

"I've heard o' this, afore."

The skipper waved the interruption aside:

"Go on," he said.

"It was on one of these voyages, sir," the German continued, "that we saw a full-rigged ship sailin' freely over a place that was marked a mine-field. We went in after her, thinkin' that the mine-sweepers must ha' cleared the fairway. But we hadn't gone far when there came a tinklin'

sound like a very light hammer tappin' against our sides."

"Mines?"

The German nodded.

"We dropped to minimum speed an' came up at once. Believe me or not, sir, there wasn't a sign of the ship."

"And you hadn't torpedoed her?"

"No, sir."

"Were you close?"

"The steersman told me afterwards he could see her clearly, about a mile away."

"She must have struck a mine."

The German shook his head.

"We'd have felt the explosion in the water, sir," he replied.

"That's right," said the lieutenant, "so you would. You think, then, that—

"She wasn't there at all."

"A phantom ship?" queried the English lieutenant, smiling incredulously.

"Yes, sir," the German answered gravely.

There was a few minutes of silence.

"I'm dootin' that ye'll ha' forgotten the story o' the U-108?" remarked the engineer.

The skipper looked at him inquiringly.

"One o' oor Deestroyers was speedin' along on patrol when she came across a U-boat, flyin' a white flag, wi' all hands on deck, signalin' surrender. The Deestroyer was takin' a chance o' bein' torpedoed, but she ran up close. The Captain o' the U-boat had gone daft, clean ravin'. Every time he came up to the surface, he said he saw the sea covered wi' floatin' bodies o' women an' children that he had drowned.

"Aye, an' the drowned folk opened their eyes in swollen an' discolored faces, an' some o' them turned over an' pointed their decayin' fingers at him. An' the crew said the air was full o' cryin' an' mockin' laughter."

The skipper shook himself as though to throw off the ugly idea.

"You're superstitious, Chief," he said, "like all Scotchmen. Did you ever hear anything like that?" he added, turning to the prisoner.

"Plenty of men went mad in the under-sea boat work, sir," the German answered. "Some kinds couldn't stand it at all. There's many believes that drowned people can never escape from the sea an' that their ghosts will stay below till the Day o' Judgment."

"That's nonsense," said the officer, stoutly.

"It micht be nonsense," retorted the engineer, "an', again, it micht not be. Can ye explain why U-49 was run aground off Holland an' the crew willin'ly interned, because there was the wraith of a Red Cross nurse aboard, sometimes by the torpedo, whiles at the periscope or in the engine-room aft?"

"Oh, they just wanted an excuse for getting out of the war," replied the practical Englishman. He turned to the prisoner. "After you saw this phantom ship, what then?"

"Ten days after, on the next trip, the same thing happened again, sir. We saw a ship, chased her on the surface. She was drawing eighteen feet of water an' we were drawing maybe eight. We followed in her wake, an' right over the spot where she had steamed we ran on a shoal, hung an' the under-sea boat broke her back."

"And the ship disappeared at once, I suppose?" the skipper asked with a touch of scorn in his voice.

"No, sir," the German answered, "she sailed on over the shoals."

"Mirage!" declared the skipper.

The engineer said nothing.

"A Swedish vessel came along," continued the

German, "an' took us off the shoal. We always reckoned a Swede the same as ourselves, or at least, as a good ally, and she gave us her largest lifeboat to make for a German port."

"And then?"

"Then I went on this last boat, sir, a mine-layer."

"Weren't you plannin' to torpedo the fleet, then?" queried the officer.

"We had two bow torpedo-tubes an' four torpedoes aboard," the sailor answered, "in case we got a chance at anything, but that wasn't our work."

"Yours was of the usual pattern," queried the skipper, "two perpendicular hollow wells, open to the sea at top and bottom, one forward of the conning tower and one aft, carrying about five mines each?"

"We carried six in each mine tube," answered the sailor.

"Twelve mines, h'm!" said the officer, half aloud. "That wouldn't be much. How many of there were you?"

"We were alone, sir," the sailor answered.

"Another happy lie," remarked the skipper cheerfully. "I wouldn't mind betting that there

were eight or ten of you, and, probably, you've sown a hundred mines in the fairway for our ships to knock up against. I'm beginning to think the *Garpike* has done a good day's work, eh, Chief?"

"Oo, aye, sir, but she's done her last day's work for a bit while, I'm thinkin'," the engineer returned.

"She did get a bump."

"Aye, sir. Anything for'ard that she didn't smash when she hit the sub, she played old Harry with when ye ran her on the beach."

"How about her engines, Chief?"

"I've no' had the time to look them over."

"Take a squint at them and let me have a report on them, will you, please. I want to get some more details from our German friend, here."

The engineer nodded, and, followed by Jed, waded out to the stranded motor-boat and began an exact estimate of the damage. A half an hour's examination was sufficient to show that the *Garpike* was out of commission for a couple of months. The whole of her bow was stove in, the gun was a wreck and the engines had been jarred to such an extent that they would need to be all taken to pieces and rebuilt.

"What do you suppose we'll be sent to do now?" queried Jed, when it was clear that the *Garpike* could not be made fit for duty by any local repairs.

"There's a gey plenty to do," responded the Scotchman, "Fritz is no' beaten yet."

Nor was he, as Jed found a week later, when he was transferred to the motor-boat patrol at a point near the Straits of Dover, covering a harbor in which were anchored the monitors, great uncouth "tanks of the sea," enormous shallow-bottomed structures mounting (in most cases) one single naval gun. Most of these were 12-inch, but some had 13.5-inch guns of the latest pattern.[1] These curious unwieldy and unseaworthy-looking boats were used for running close inshore and bombarding points several miles inland. They were of immense service in helping the land forces near Dixmude. A large flotilla of destroyers accompanied them when they left their home port, but the motor-boats stayed behind.

The entry of the United States into the war excited Jed greatly and he told his friend the engineer, with whom he had taken up the motor-patrol

[1] The author has seen reports of 14-, 15-, and even 16-inch guns mounted on monitors, but no confirmation of these reports has been officially secured.

on his new station, that but for him, he would like to try to be transferred to work under the Stars and Stripes.

"But, Chief," he said, "we've been together for three years now, and I just couldn't leave. You've been everything to me. I've been all through the war with you, hardly missing a day, and instead of losing my time, I've got a better technical training than if I'd gone to a big university. It isn't that I'm not loyal to the U. S. through and through, but I'm doing more for the Allies by staying right where I am. Don't you think so?"

The engineer laid his hand gently on the boy's shoulder.

"Ye ken weel enough," he said, "that I'd no' hold ye from your ain Navy, if I thought it better. But I think ye're richt. Ye can do mair good, here, where ye're weel known an' trusted. I've never told ye, lad, but I had three sons in the Expeeditionary Force."

"Yes?" queried the lad.

"They were all killed on the same day, yes, in the same hour, holdin' the Germans back at Mons. The youngest, a bonny lad, was just your age, an—"

*British Official Photo.*

**More than an Alliance — a Friendship.**

**American and British tar, chums in person as their nations are kin in spirit.**

He turned away and busied himself with the engines.

Jed made no reply, but he never spoke of leaving his Chief after that.

The patrol work was arduous and to a certain degree monotonous, for only on one occasion did the boy's new ship, the *Moss Rose* (leader of the patrol and irreverently called the *"Strike me Pink!"* by the rest of the fleet because of her commander's favorite adjuration) succeed in capturing a submarine. It was, however, a sufficiently remarkable capture.

There was a dense fog and the *Moss Rose,* which had been out on an individual expedition of her own, was nosing her way back along the shore. Passing a certain outlying point, there was a very savage tide-rip, and the Commander decided to drop the anchor for an hour or two, until slack water should enable an easier passage. No bearings from land being observable in the fog, and the channel being narrow and studded with rocks on either side, the delay of an hour was wiser than risking the loss of the boat.

Accordingly, the anchor was dropped, but the chain only ran out a few fathom. Heaving the lead, the depth was found to be twice as great

as the length of anchor cable out. Evidently the anchor had grounded on a rock, but since it seemed to hold, and there was little wind blowing, it was left.

A few minutes later, a slight rippling of water at the bow threw the look-out into consternation.

"The anchor's dragging, sir," he reported.

The Officer of the Watch looked over the side.

"Great guns, that's queer!" he said. "She's dragging the opposite direction to the run of the tide."

Said one of the sub-lieutenants:

"Maybe it's that biggest fish who always gets away!"

His senior looked at him quickly and curiously and said:

"Sub, your jokes are feeble, but—"

His eyes steadied as he looked down at the sea. There was no doubt of it, the boat was moving. He continued:

" . . . but what are we supposed to be fishin' for?"

The junior looked at him and whistled softly under his breath.

"You think it's that?"

"Tell the gun-crew for'ard to keep their eyes

peeled. But, if they should see anything, I don't want them to fire."

"Not to fire!" exclaimed the junior, his eyes opening in surprise.

"No, not unless I give the word."

Utterly uncomprehending, the sub hurried forward.

For half an hour the mysterious performance continued, the *Moss Rose* proceeding out to sea in the dense fog, with her engines still and one anchor down.

Then, as the senior had suspected, out of the water came a double periscope. Within a few seconds, it seemed, she must have seen the motor-boat for at once she began to submerge.

The sub looked aft longingly. Never would he have so good a chance to sink a craft. But no order came.

There was a sudden tug at the bow, and the motor-boat whirled round and started through the water in another direction.

Then the young officer understood.

"Our anchor's foul in her somewhere," he said, "and since we've only three fathom of chain out, she can't get more'n eighteen feet away."

"Can't she let drive a moldy, sir?" asked the

long-service gun-layer in charge of the gun's crew.

"No, Andrews, she can't," the sub explained. "She hasn't room. Her torpedo tubes, even when she's awash, are at least seven feet below the surface, and we only draw four and a half."

"She'll tow us to Germany, sir, then."

"Not much she won't, Andrews. Towing us this way will soon use up her storage batteries, and she'll have to come up."

"And then, sir?"

The sub chuckled.

"If I have correctly judged Lieutenant Murchison's plan," he said, "I think he wants to take submarine and all a prisoner."

The petty officer leaned forward eagerly.

"Has that ever been done afore, sir?"

"I think not, Andrews."

The rest of the gun-crew grinned broad appreciation.

Presently, as the Sub had expected, up came the submarine, up and up, until her conning-tower —a weird checker-board camouflaged affair,—was clear out of the water. Her Commander came up the hatch. Several men followed and made a dash for the forward gun housing.

In response to a sharp order, the motor-boat's

machine-gun spit a vicious rattle of fire over the submarine's deck. No man was there, as yet, but the meaning was sufficiently clear. The submarine's commander rumbled out a volley of German words.

The English officer promptly interposed.

"It is not of the slightest use for you to resist," he said, quietly. "If you attempt to unhouse your gun, every man who goes forward will be shot. If you attempt to send a man to unfoul our anchor, he will be picked off, too. If your batteries are out, as I suspect, and you start your engines to recharge them, at the first revolution I shall send you to the bottom with all hands. If you scuttle the ship, you will only drown yourself, and I shall be able to buoy the anchor cable and we can grapple your submarine whenever we like. If you surrender, honorably, you will be treated as prisoners of war."

The German officer, after a wrathy outburst, cooled down, and ended by accepting the terms of the Commander of the *Moss Rose*. A line was passed and made fast to the bow of the submarine, and with its entire German crew standing on deck, the U-boat was triumphantly towed in towards the shore, where a fleet collier, sum-

moned by wireless, took up the tow.[1] Then, and not till then, was the anchor of the *Moss Rose* disentangled from the heavy steel netting of the submarine's propeller guard.

"Do you suppose, Chief," asked the lad, as they were standing on deck, rejoicing in the capture of the submarine and looking at her checkerboard colored conning-tower, "that this marine camouflage is really useful? Some of it looks so absurd?"

"The low-visibility camouflage," the engineer replied, "is a gude thing, an' useful, but the 'dazzle' system is little short o' wonderful. Ye've never done any convoyin' or ye'd know. At anything over three miles, a ship camouflaged with colors o' low visibility such as red, green an' violet, is hard to see, because those colors fuse into gray, just as a parrot with red, green an' violet feathers, looks gray a couple o' hundreds yards away.

"That worked well at first, but then the Germans invented devices whereby they could hear weel enough a ship's propellers four or five miles away. They could easy run close an' come up

[1] This most extraordinary story appears to be authentic. It is mentioned in the official reports.

within maybe a couple o' miles, or maybe less, just the richt distance for a bit torpedo. Then the red, green an' violet, was a disadvantage. It threw the ship up brightly against the sea an' sky.

"The 'dazzle' system o' camouflage, which is British, is designed to puzzle the eye. At a mile and a half or two miles, ye can't tell whether a 'dazzled' ship is comin' or goin'. Ye can't tell if she's high out o' the water, or low. Ye can't tell, sometimes, if she has one, two, or three funnels. For a soobmarine, with a periscope maybe four to six feet out o' the water, a 'dazzled' ship is like shootin' at a 'now ye see it an' now ye don't' target. Soobmarines have been known to fire torpedoes as much as eight degrees out o' line, when thinkin' they were firin' straight at a dazzled ship, even at close range. The human eye, after all, is no' a pairfect mechanism."

"Well," returned the boy, who was in high glee, "we've no need to complain, going back with a submarine in our vest pocket."

"No," agreed the engineer, "but ye'd better be considerin' that if that anchor cable had been maybe two fathoms longer, yon soobmarine would ha' been able to change her trim so that it was

down by the stern, an' with its torpedo tubes pointin' up at an angle of maybe fifteen degrees it could ha' sent a moldy clean through us an' out the other side. An' we'd be sleepin' the long sleep now."

"We're not, anyhow," retorted Jed, with the buoyancy of youth, "we'll have a lot more fun with Fritz yet."

"I'm dootin', some o' these days," said the Scotchman, "whether we'll find the way sae smooth. From what I hear, oor biggest test is comin'."

"What's that, Chief?"

The engineer shook his head.

"I've no' the privilege o' tellin' ye," he said. "But if we succeed it'll be one o' the most glorious doin's o' the war."

"Goin' to rush the Kiel Canal?" hazarded the boy smilingly, and promptly proceeded to forget the engineer's solemn warnings. He had been equally mysterious before with regard to possible future happenings and nothing had ever come of it. But he remembered it, a week later, when the engineer came on board at the wharf where the *Moss Rose* was lying, and said to Jed, as he entered the engine-room,

"Lad, it's for to-night!"

"What is?"

"I'll tell ye when we're under way."

The night was overcast and there was a drifting haze as the *Moss Rose* swung out to her station in advance of the monitors. The wind was sharp and the sea choppy.

"Is it really the Kiel Canal?" asked Jed, when they were well out of the harbor. "There seem to be a lot of ships about."

"Can ye see any lights?"

"No," answered the boy, "I can't. But I can feel them, somehow."

"Aye," said the engineer, "ye're beginnin' to know by instinct a bit, now. Weel, there's enough ships ahead of us an' behind us. There must be ten or twelve French Destroyers, there's our six Monitors, and there's six Cruisers."

"Cruisers!" said the boy in surprise, "you don't mean the Cats!"

"No," said the engineer, "the *Vindictive, Brilliant, Iphigenia, Sirius, Intrepid,* an' *Thetis.* Then there's the ferryboats *Daffodil* an' *Iris.*"

The lad stared at the engineer as though he thought his friend had lost his wits.

"That junk!" he declared at last. "Why, they

couldn't fight a fleet o' sardine-cans with popguns on them!"

"No? Weel, my lad, ye're goin' to see the nicht what can be done wi' yon junk!"

Jed grew serious. After his first surprise the thought rushed over him at once that if Great Britain was selecting these old and almost abandoned vessels for the work—even the *Vindictive* dated back twenty years—it must be extremely dangerous, so dangerous that she did not wish to risk the loss of more valuable craft.

"Do you know what's going to be done?"

"Aye," said the engineer, "an' we've an important part to play. I'm goin' to tell ye exactly, so that if I get hit, ye'll know what it all means, an' what will need to be done. O' coorse, I dinna need to tell ye that all ye hae to do is to follow orders, but the British Navy is not like the German Navy an' a gude man will often do better work if he knows what it all means."

Jed stiffened forward to attention.

"Ye've heard o' Zeebrugge?" he said.

"Of course," answered Jed, "after Heligoland it's the biggest German submarine base. Are we going there?"

The other nodded.

"H'm," rejoined the boy seriously, "I guess we are looking for trouble."

"There's a long mole, aboot a mile long, curvin' out to the north-eastward," the engineer continued, taking pencil and a note-book and drawing a diagram as he did so. "The ship channel into Zeebrugge an' the entrance to the Bruges Canal lies to the eastward o' this mole an' curves in at aboot the same way. There's machine-gun nests on the mole, all the way along. At the shore end o' the mole there's a hantle o' heavy batteries, a dozen anyway, from what our air-scouts tell us. Lyin' in the curve o' the mole, on the inside, is a German Destroyer.

"An' that's not all. On the other side o' the ship channel, that's to the east'ard, there are six old hulls mounted with heavy guns actin' as block ships, an' three-quarters of a mile away from the breakwater is Goeben Fort with heavy long-range guns."

"Sounds ugly," said Jed, frankly.

"It's nae doot as ugly as it sounds," the engineer agreed. "Now, what we're plannin' to do is to take these Cruisers into the ship channel, right in within the breakwater, if we can, an' sink them in the very entrance. They're all full of

cement an' when they sink an' the water gets to 'em, they'll be like so many rocks in the channel, an' there'll be nae dredgin' them away, nor blowin' them up."

"Sure," agreed Jed, "when they get there! But I should think the batteries would smash the Cruisers into scrap before they ever turned the corner of the mole."

"So they would," answered the engineer, "if they knew. But they're not to know. They're goin' to think that we're plannin' a landin' party for seizin' the town."

"You don't mean we're going to put men ashore in that fury o' fire?" asked the boy.

"Aye," said the engineer, gravely.

"But it's—it's death!"

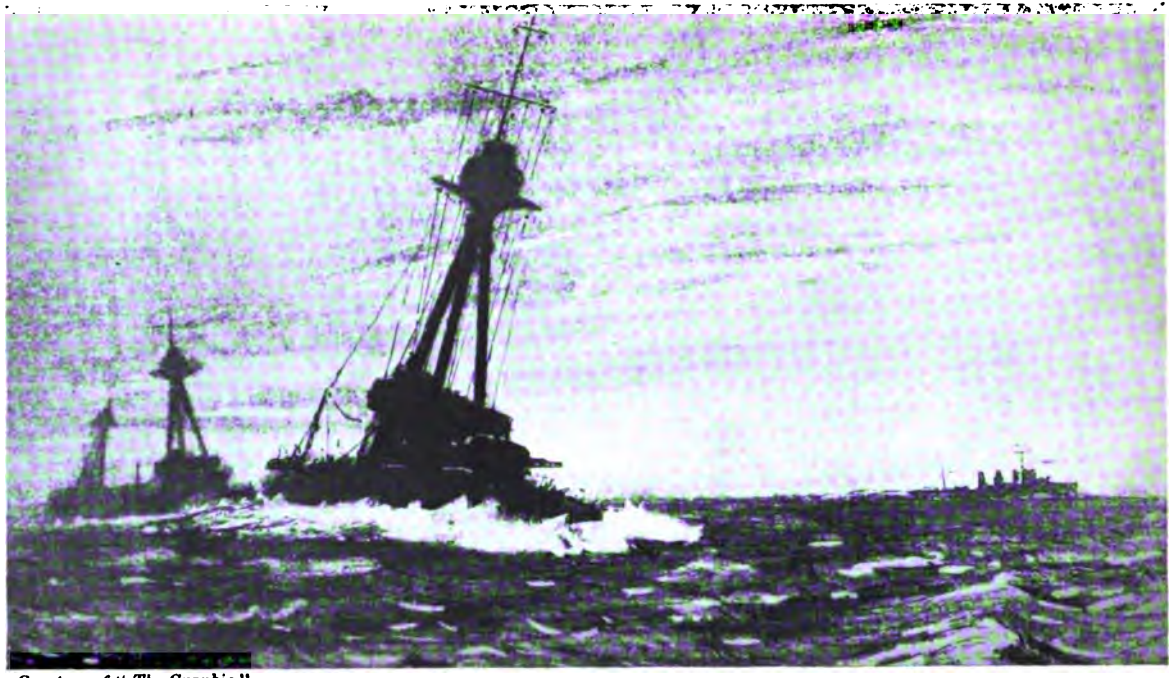
"Aye, it's death. But there's nae lack o' volunteers for that."

Jed had sobered down.

"Tell me," he said.

The engineer pointed to the outer curve of the mole or stone pier, with his pencil.

"The *Vindictive* is to land here," he said, "with the ferryboats *Iris* and *Daffodil* following, both loaded with men. The three great groups of buildings on the mole,—the seaplane station, the



*Courtesy of "The Graphic."*

THE GRIM "TANKS" OF THE SEA.

The Monitors, uncouth monsters of mysterious movements, who mount big guns and yet can sneak close inshore.

barrack sheds an' the munitions storehouse are to be seized an' blown up.

"And all the time the men will be exposed to the fire from the batteries and the fort?" asked Jed in an awed voice.

"All the time."

"There won't be one left alive," the boy declared.

"That may be."

There was a moment's silence, as the motorboat droned on through the dark, towards Zeebrugge.

"Then," the engineer took up the plan, "two soobmarines loaded with explosives are to be run against the arches of the viaduct leadin' to the mole an' to be blown up. All this, you see, will concentrate attention on the *Vindictive,* an' on the inshore end of the mole.

"At the same time the five Cruisers, their holds full of cement, will come out o' the dark an' run up the ship channel at top speed. When they reach the mouth o' the canal—if any of them reach the mouth—they will be sunk. If the canal is choked, one of Germany's biggest soobmarine bases will be oot o' commission an' that will be worth all the price o' life paid upon the mole."

"And we?" asked the boy. "Where do we come in?"

The engineer fixed the lad with a quiet and a steady eye.

"We are to follow the Cruisers in, an', after they are sunk, take off any men that may be left alive o' the officers an' crews who took them in."

Jed sat frozen still, looking at the chart.

"We're going in there?" he said slowly, "after the whole harbor has been wakened and every gun is firing at full action and point-blank range,"

"Aye. In there!"

"And if we never come out?" queried Jed, a shake in his voice.

The engineer's words fell solemnly.

"Then we help to block the channel!"

Jed shivered, despite the heat of the engine-room.

Slowly, slowly the beads of perspiration, cold perspiration, came out on his forehead.

"We help to block the channel—" he repeated the words slowly, stutteringly, even.

Silence, dead silence, save for the purring of the engines and the swish of water at the bows.

"But we might win back again?"

"Aye, there's a chance."

Jed looked up bravely.

"I'm glad I'm with you in this, Chief," he said. "When do we begin?"

"It won't be long now," the engineer replied. "Go up on deck and get some air. Ye'll need to blow the sleep out o' your eyes the nicht."

The boy clasped the Chief's hand as he went by. There was no need of words.

Down the coast a great searchlight swung its beam to and fro over the sullen sea. Like a spark on the stern of the *Vindictive* Jed could see the little winking light, which in Morse, spoke to the ferry-boats following her. To shoreward, the French Destroyers, bearing the most exposed station, poured out from their funnels a dense, rolling bulbous mass of smoke, forming a cloak of invisibility, the smoke itself unseen in the black dark.

A northeast wind moved the volume of it shoreward from the ships. Beyond was the distant town, its defenders unsuspicious. It was not until the *Vindictive*, with bluejackets and marines standing ready for landing, was close upon the mole that the wind lulled, and came again from the southeast, sweeping back the smoke screen and laying bare the Cruiser to the scores of eyes that watched to seaward.

There was a moment immediately afterward when it seemed to those on the ships as if the dim, coast-hidden harbor exploded into light. A star shell soared aloft, then a score of star shells. The wavering beams of the searchlights swung around and settled into a glare. A wild fire of gun flashes leaped against the sky, strings of luminous green beads shot aloft, hung and sank. The darkness of the night was supplemented by a nightmare daylight of battle-fired guns and machine guns along the mole. The batteries ashore awoke to life.

It was in a gale of shelling that, through the rifted smoke, Jed saw the *Vindictive* lay her nose against the thirty-foot high concrete side of the mole, and let go her anchor, while she signalled to the *Daffodil* to shove her stern in, and to send her landing troops over the larger vessel's decks.

The *Iris* went ahead and endeavored to get alongside the mole likewise. The fire was intense, while the ships plunged and rolled beside the mole as the seas lashed upon the structure, the *Vindictive,* with her greater draught, jarring against the foundations of the mole with every lunge. Both the *Vindictive* and the *Iris* were swept diagonally by machine-gun fire from both ends of the mole and by the heavy batteries ashore.

The commander of the *Vindictive* conned his vessel from the open bridge until her stern was laid in, when he took up his position in the flame thrower hut on the port side. It was marvelous (said the official Admiralty report afterwards) that any occupant should have survived a minute in this hut, so riddled and shattered was it.

The *Vindictive* was fitted along her port side with a high false deck, from which ran eighteen brows or gangways, by which the storming and demolition parties were to land. The men gathered in readiness on the main lower decks, while the marines waited on the false deck just abaft the bridge. The bluejackets were amidships.

The gangways were lowered and they scraped and rebounded upon the high parapet of the mole as the *Vindictive* rolled in the seaway.

The word for the assault had not yet been given when the leaders of both landing parties were killed, the Colonel of the marines by a shell, and the Captain in charge of the bluejackets by machine-gun fire which swept the decks.

The landing on the mole was a perilous business. It involved a passage across the crashing and splintering gangway, a drop over the parapet into the field of fire of the German machine-guns

which swept its length, and a further drop of some sixteen feet to the surface of the mole itself. Many were killed and more wounded as they crowded up the gangways, but nothing hindered the landing at every point where a "brow" ground and slid upon the stonework of the mole. Though scores fell, others, armed with grenades and Lewis guns, made good their holdings, and the demolition parties rushed forward to the destruction of the shed.

One of the lieutenants had his arm shot away by shell as he rushed forward from the upper deck and lay in darkness while the storming parties trod him under. He was recognized and dragged aside by the Commander. He raised his remaining arm in greeting.

"Good luck to you!" he cried, as the rest of the stormers hurried by, "Good luck!"

The *Iris* found herself in even worse position. Her attempts to make fast to the mole, ahead of the *Vindictive,* failed in spite of the most heroic endeavor. Her grapnels were not large enough to span the parapet, and the tearing of the waves as they dashed up and against the mole, dragged every hold away. Two officers climbed ashore and sat astride of the parapet trying to make the

grapnels fast, till each was killed and fell down into the boiling spume at the foot of the mole, between the ship and the wave-beaten wall. The Commander of the vessel had both legs shot away and died next morning. The ranking officer, though seriously wounded, took command despite an agony of pain.

Seeing the impossibility of holding the place, he ordered the *Iris* to fall back and fall in astern of the *Vindictive*. She suffered heavily, for the star shell and searchlights made the scene unnaturally bright and the ships were under the point-blank range of heavy guns.

A single big shell plunged through the upper deck and burst below at a point where fifty-six marines were waiting for the order to go to the gangways. Forty-nine were killed, the remaining seven were wounded. Another shell, bursting in the ward-room, which was serving as a sick bay, killed four officers and twenty-six men.

"Lad!" cried the engineer to Jed, at this moment. "Get under cover! We're goin' in!"

The *Thetis* led, steaming directly into the tornado of shells from great batteries ashore. She was going to certain doom and she knew it. A large number of her crew had been taken off, but

of the remnant which remained, facing destruction cheerfully, there were hands enough to keep four of her 6-inch guns going. Much of the success of the venture was due to this, for, though Germans proved excellent gunners in target practice, they went to pieces under fire.

Creeping around the outer end of the mole, near the unlighted lighthouse, the *Moss Rose* followed the Cruisers in, her lights out, even the binnacle lamp being shaded, picking out the darkest corners of the harbor. The motor-launch crept on in the midst of a storm of shell, not aimed directly at her, though scores of heavy projectiles fell in the water near by or whizzed overhead. There was not a whisper aboard, though shouting could not have been heard in the pandemonium raging on every side.

Following close upon the heels of the leading *Thetis,* one of whose funnels had already been riddled and whose steering gear had been struck and was working badly, came the *Intrepid* and the *Iphigenia.* Shell after shell struck home. The *Intrepid* burst into flame, but she came on, keeping the channel clear and steadily.

Ill fortune seized the *Thetis.* Caught under a withering fire from the large guns mounted on

the barges, she swerved out to save herself from being driven on the tip of the mole, and fouled one of her propellers on the steel-meshed net guarding the channel from the shore side. The net wound itself round the ill-fated Cruiser's propeller and rendered her unmanageable.

She yawed in the channel. The batteries got her range exactly and pounded her without mercy. Shells fell like Plutonic hail.

Down in the engine-room, engineer officers, artificers, oilers and stokers were at their posts; on the wrecked bridges, little more than a tangle of metal, the officers conned and navigated the ship, while quartermasters and signal men on the bridges above, and gun crews on the shrapnel-swept decks below, faced their duty without flinching.

The *Thetis* bumped into the bank, edged off and found herself in the channel again, but still some hundreds of yards from the desired opening into the canal between the breakwaters. She was in a sinking state. Even in the main channel, however, she would block navigation seriously, and her commander blew her up right there.

Aboard the *Moss Rose,* the telegraph clanged sonorously for "Full Speed Ahead."

Out from the darkness and the shelter of the mole, out under the whirring scream of the shells, out amid the livid rage of missiles striking sea and shore, sped the launch.

That she was not sunk at once was due to the concentration of the German fire on the Cruisers. The shore batteries sought, at all cost, to prevent the blocking of the port, for, by this time, the British intentions had declared themselves. The searchlights and the flares had revealed what vessels were these which were forging on, and the Huns knew well that such ancient craft would only be used for sacrifice.

The *Moss Rose* shot to the side of the sunken and blazing *Thetis,* and took off part of the remnant of her crew, many of them terribly mangled. Another launch, which had not been visible before, sped like some swift black water-insect from some corner of the harbor where she had lain hidden, and helped in the work of rescue.

Close by, near enough to have thrown a line to the launches, the tall Cruiser *Intrepid,* now erupting flame and smoking like a volcano, passed desperately on.

In entering the harbor, the motor launch of the *Intrepid* had been unable to get alongside to take

off the surplus crew, and the Cruiser had men enough aboard to serve all her guns at their topmost fire. She was a fearsome sight of flame as she charged on, her guns spouting missiles in a steady stream, her 6-inch shells all hitting.

Striking on solid ground, every shell burst. The wharves and shore streets of Zeebrugge looked like a lake of molten metal or the interior of a lava-filled crater, covered with bubbles bursting in orange flames. The white glare of the shifting searchlights and the flickering green-white flare of star shells overhead, threw every flash and every shadow into high relief.

Now that the *Thetis* was sunk, the German batteries, the barges and the guns of the fort concentrated all their fire on the *Intrepid*. Two funnels were shot away, and the furnace fumes rolled out along the decks. Shells fell everywhere, each shell starting a new conflagration. She was a mask of flame. The roar of the blazing interior could be heard above the guns.

Yet, in this inferno, men above decks and men below must still have been at their posts, for the engines still throbbed on, and, from the bridge, now invisible in fire and smoke, her steering held her true to the channel. At last she reached so

close to the head of the canal that the batteries could not fire upon her without enfilading their own defenses. No opposition remained save the withering sweep of machine-guns from the mole and from the shore.

It seemed impossible that this mass of spouting flame, scarcely bearing any resemblance to a ship, could still steer and still steam, but she drove on straight into the canal, then sheered sharply into the mud of the western bank.

The Commander ordered the crew away, the faithful motor launch of the ship herself having followed closely in her wake, masked by the smoke of her burning. Then, with only two men left on board, himself and the ranking engineer officer, the Commander blew up the ship by means of electric switches in the chart room. The engineer officer, who had remained in the engine-room to make sure of the destruction, came up, reported the explosions complete and slipped over the side, finding a place in the last boat.

The Commander of the *Intrepid,* having sent away his boats, and being left alone on the sunken but still burning hull, now hardly more than a skeleton above the water-line, had no means of escape save by a Carley float, an apparatus like an

exaggerated life-buoy with the floor of a grating. Being designed for life-saving, upon contact with the water it ignited a calcium flare, putting the Commander in plain view to a German machine-gun crew.

The bullets were beginning to spatter the water about him, and, within a few seconds he would undoubtedly have been hit, when, as his luck would have it, an eddy of wind blew down a great cloud of smoke from the burning ship. At the same moment, he caught the line thrown to him from the waiting motor-launch and was towed along at terrific speed, half under water, clawing hold of the float.

The German gunners, not knowing that the buoy was in tow of the motor launch and supposing that it was where it had last been seen, continued to spill bullets at that point. When the cloud of smoke thinned, the motor launch, still towing the float, was half-way out of the harbor, and risked stopping for a moment to take the Commander aboard.

The *Iphigenia* had her own difficulties. Owing to the concentration of fire first upon the *Thetis* and then on the *Intrepid,* she had been less severely shelled than her predecessors. When

the *Intrepid* was set on fire and the smoke poured out from her in dense volumes, this dense veil shadowed the *Iphigenia* from the German gunners. But, at the same time, it hid the shore from the eyes of the ship's officers, and the *Iphigenia*, losing her way in the channel, rammed a dredger with a barge lying beside it which lay at the western arm of the canal.

The Commander rang for full speed and forged ahead with the whole weight of the ship, breaking the dredger and the barge apart. Though still foul of the barge, he forced his way into the canal, shoving the barge ahead of him. Reaching the point where the *Intrepid* had been sunk with her nose firm in the western bank, the *Iphigenia* sheered into the mud of the eastern bank, and, keeping the engines going so as to force her firmly into the mud, the Commander blew her up, so that her stern almost touched the stern of the *Intrepid*, thus closing the harbor.

The motor launch of the *Iphigenia* followed her ship in with the utmost apparent disregard of danger, and took the men off after the ship had been grounded and sunk. She got peppered heavily on the way out, however, and lost twenty-one men.

The engagement, including both the attack on the mole and the blocking of the harbor, lasted sixty-four minutes, and cost the British 588 officers and men.

From the time that the *Moss Rose* had run out of her shelter near the tip of the mole, Jed had not seen his Chief, except for a moment, when he had darted back to the engine-room to handle the engines as the motor launch drew up to the *Thetis.* When, ready to leave the side of the sunken ship, the engine-room telegraph rang first for Half- and then for Full-Speed, Jed followed the orders with the utmost celerity, the engineer not having returned.

A shell fell full on the after portion of the deck, jarring the motor launch seriously, and, a moment later, Jed heard overhead the groans of the wounded. He could do nothing to help, however, for his post was at his engines. Presently the signal came for Half-Speed, then for Stop, and the *Moss Rose* ran alongside a Destroyer.

Jed was aching with anxiety to find out what had happened to his friend the Chief, but he knew that he dared not move from his post.

Presently there came a call down the voice-pipe:

"Engine-room!"

"Sir?" answered Jed.

"Is that the Assistant speaking?"

"Yes, sir."

"Engineer Ferguson is seriously wounded. You will assume charge."

"Very well, sir."

And the *Moss Rose* swung out to sea for home harbor.

The engineer, who added a slight knowledge of surgery to his numerous other fields of knowledge, had stayed on deck after the trans-shipment of the men from the *Thetis* to do some emergency bandaging and First Aid for the more desperate cases. While helping the *Thetis'* surgeon, himself badly hurt, a shell had fallen on the deck, a splinter entering his body. The wound was so serious as to preclude the engineer from rejoining the *Moss Rose* for weeks, perhaps months, perhaps never.

Jed felt himself fully competent to fill the place, but his youth prevented him from being given a position of any greater responsibility than that which he had borne. A new engineer was sent aboard. This man, a Lancashire worker, was little more than a thoroughly experienced mechanic.

He knew practically nothing about theoretical engineering, but he was extraordinarily proficient in practical matters and handled the engines as well as the old Chief himself.

Realizing that he knew a great deal more about the theory of mechanics than his new chief, one day, in an attack of over-confidence, due partly to his Americanism and partly to his youth, Jed blurted out a hasty criticism of an order. It was a grievous error. The new chief was sensitive as to his own lack of "book-learning," he turned on the lad with a swift and coarse rebuke, and, from that day on, there was ill-feeling in the engine-room.

This strained situation brought back to Jed his former desire to finish his war service, if it were possible, under the Stars and Stripes.

On one of his shore leaves, he took the train to the north of Scotland, to see his old friend the engineer, to tell him of his troubles and to ask his advice. The Scotchman, still on his back and very weak, smiled with pleasure on seeing the lad, and gladly undertook to counsel him.

"I'm no' sayin'," he remarked, when the whole matter had been frankly put before him, "that ye're no' richt to want to ficht on your ain side.

It's just possible that such a thing micht be arranged."

Jed waited eagerly.

"Ye ken," the engineer continued, "ye hae mair friends than ye think. There's the skipper o' the *King Stephen,* an' o' the *Garpike*—he's lieutenant-commander o' a Destroyer, now—an' the Commander o' *H. M. S. No. 1.* Forby, there's myself. An' I've reason to believe that the lieutenant on the *Moss Rose* will put in a gude word for ye.

"Not bein' a Britisher, ye canna very weel ask for a place in the regular Navy, an' if ye apply in your ain Navy, ye'll hae to begin at the beginnin'. I'm dootin' if ye will find anything big an' spectacular, like ye're always huntin'. Raids on Zeebrugge an' the like don't come off every day."

"What then?" asked Jed. "I'll take anything you suggest and go anywhere you say. I asked Father about it just the other day. He told me that I couldn't do any better than put it up to you."

"He's a real gude man, your father," said the engineer. "Ye ken he came north here to see me, no' long ago?"

*Official U. S. Navy Photo.*

THE SUPER-DREADNOUGHTS OF UNCLE SAM.

***Official U. S. Navy Photo.***

**THE AMERICAN FLEET AT THE TIME OF ENTERING THE WAR.**

"Yes," answered the boy, "I'd been trying to tell him how much you'd done for me."

"He's a man!" declared the engineer emphatically. "He micht almost hae been a Hielan'-man!"

And Jed knew that the highest praise had been spoken which lay in the Chief's vocabulary.

Then the Scotchman's eyes twinkled, though with a suspicious moisture in them, as he added:

"Do ye ken what he said to me, just afore leavin'?"

"No," replied Jed. "What?"

"He said ye had two fathers, now."

"Yes," answered the boy gently and gratefully, "that's about how I feel, too."

"Then let me advise ye, as I would my ain boy. Go back to the *Moss Rose,* an' tell yon engineer body that ye're sorry for crossin' him. Remember, lad, even if he doesna ken as much as ye think —no' that ye ken it all yourself, forby—his life's worth as much to him as yours is to you, an' he's riskin' it every day for England. That, by itself, calls for respect. Forby, he's a hantle older than you. Do that! Meanwhile, I'll be tryin' for a transfer for ye."

"I hate to eat crow," responded Jed, after a mo-

ment's hesitation, "but I promised I'd do just exactly what you said, Chief, and I will."

Returning to the *Moss Rose,* he went straight to the new engineer, whom he really disliked, and apologized frankly. The old mechanic, grim-visaged as the boy began, little by little relaxed his stern expression. He smiled, so far as his hard face could be twisted into a smile.

" 'Tis a bold thing an' a hard to admit a fault," he answered, to the lad's astonishment. "If you were wrong to try an' teach your elders, I was wrong to forget that you were but a boy. An' here's my hand on it!"

He never referred to the incident again, and life in the engine-room of the *Moss Rose* became a hundredfold more friendly, though Jed never could feel towards his new chief as he did to the old engineer. He was unfeignedly glad when at last a letter arrived, informing him of his transfer to American service. As the Chief had forewarned him, it was but work of a minor order, that of running the engines on a small dispatch boat carrying mail and supplies to the American fleet engaged in helping the British to set the famous mine barrage, closing the North Sea.

The work was hard, with long hours, disagree-

able, and absolutely without excitement, but Jed was well content. It was his first "independent command." He had seen much of the war, he had actually taken part in one vivid fight under the Union Jack—that of the raid on Zeebrugge—now he was doing his bit under the Stars and Stripes. More, he could not ask.

Fate, however, still held in hand for him a final triumph. With the signing of the armistice and the end of the war, came the Allied demand that the German High Seas Fleet should surrender. The American warships which had been operating with the British Navy were ordered to join the Allied fleets at the point designated off the Scotch coast where the German vessels were to surrender—near May Island, opposite the Firth of Forth. The auxiliary ships of the fleet followed, though staying inshore, and the dispatch boat went as a matter of course. This gave Jed the supreme opportunity of witnessing the unparalleled scene.

It was dawn of November 21, 1918, when the main allied fleet formed up in a double line, six miles apart and fourteen miles long. Five American battleships, the *New York, Texas, Arkansas, Wyoming* and *Florida,* were in the line. All

hands were at action stations. Every gun was turned on the hostile incoming fleet. Treachery would have been met with an appalling weight of metal.

A small British Light Cruiser, the *Cardiff*, acted as pilot and led the way. She was trailing an observation kite balloon. Overhead circled a British dirigible, equipped with wireless, acting as eyes for the Allied ships.

Immediately following the light but swift *Cardiff*, came the five biggest Battle Cruisers of the German Navy, led by the *Seydlitz*. Their guns were harmlessly pointed fore-and-aft, as, like whipped curs, they followed the little vessel that one shot of their 12-inch guns could have sunk. Following them came the ponderous Dreadnoughts, led by the *Friedrich der Grosse*, the flagship of Admiral von Reuter. There were nine of these, nine great monsters of war, the pride of the German people, nine great battleships which had skulked for four years in the Kiel Canal nor dared once to come out and give open battle. Three miles behind came seven Light Cruisers, led by the *Karlsruhe;* and three miles still further astern steamed fifty Destroyers, in five columns abreast, ten Destroyers to a column.

The greatest naval capitulation in the world was going on before the boy's eyes. Never, since Primitive Man had put his first skin coracle in the water, had there been such an abject surrender. In every land on which the German hand ferociously had lain, there was rejoicing.

There was none at sea. The shame was too great.

Shame had smirched the honor of the German Navy throughout the whole war. Submarine and mine attacks on unarmed vessels, on liners carrying women and children, on hospital ships showing the Red Cross, had incurred the contempt and detestation of humanity. Only the memory of Admiral von Spee remained to remind the world that German naval officers could be gallant gentlemen; only the records of the South Sea squadron and of the *Blücher* remained to bid the world recall that German sailors might still be loyal and brave.

Somberly illumined in infamy, the impotent ships steamed by.

"I'd hoped, somehow," said the American captain of the little dispatch boat, "that they'd have scuttled their ships, half-way across, and gone to their deaths like men!"

And almost every officer and man on the Allied fleets felt the same way.

In utter silence the German craft passed on between the grimly threatening lines of their captors. There was no sound from any of the waiting ships, nothing but the guns trained and the shells ready, for no longer could any trust be placed in German honor. There was no cheer of victory. Men talked in whispers. Even for a foe, no sailor would have desired such ignominy.

Finally, when the last German ship was moored, Admiral Beatty's historic signal fluttered to the masthead of the *Queen Elizabeth*:

"The German flag is to be hauled down at sunset and is not to be hoisted again without permission."

When the sun sank that evening, War at Sea was ended, but German naval honor was drowned more deeply still.

THE END

# THE WONDER OF WAR IN THE AIR

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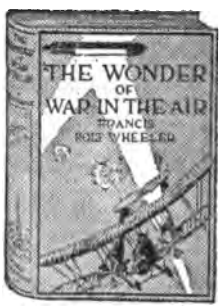


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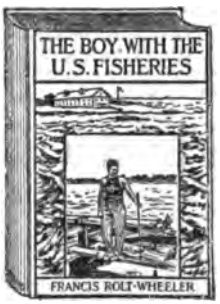


WITH a bright, active American youth as a hero, is told the story of the Fisheries, which in their actual importance dwarf every other human industry. The book does not lack thrilling scenes. The far Aleutian Islands have witnessed more desperate sea-fighting than has occurred elsewhere since the days of the Spanish buccaneers, and pirate craft, which the U. S. Fisheries must watch, rifle in hand, are prowling in the Behring Sea to-day. The fish-farms of the United States are as interesting as they are immense in their scope.

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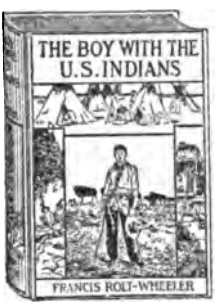


THIS book tells all about the Indian as he really was and is; the Menominee in his birch-bark canoe; the Iroquois in his wigwam in the forest; the Sioux of the plains upon his war-pony; the Apache, cruel and unyielding as his arid desert; the Pueblo Indians, with remains of ancient Spanish civilization lurking in the fastnesses of their massed communal dwellings; the Tlingit of the Pacific Coast, with his totem-poles. With a typical bright American youth as a central figure, a good idea of a great field of national activity is given, and made thrilling in its human side by the heroism demanded by the little-known adventures of those who do the work on "Uncle Sam."

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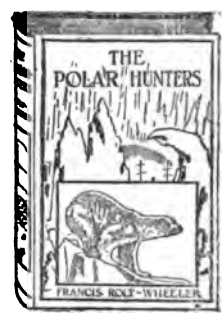


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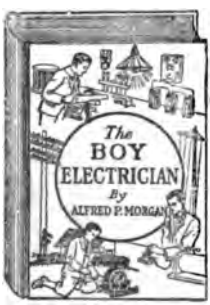


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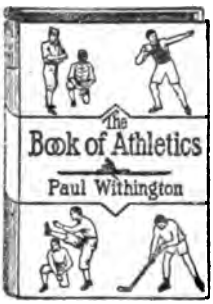


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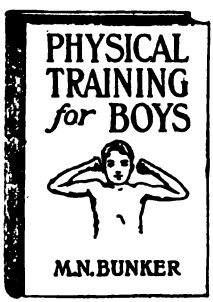


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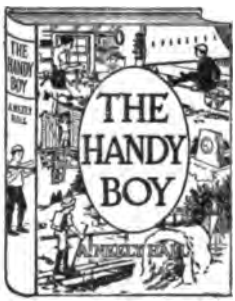


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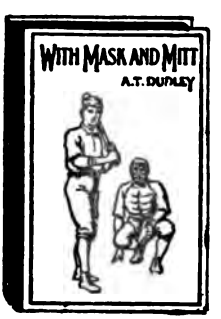


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THE "Cup" is an annual prize given by a club of Yale alumni to the member of the Senior class of each of several preparatory schools "who best combines proficiency in athletics with good standing in his studies."

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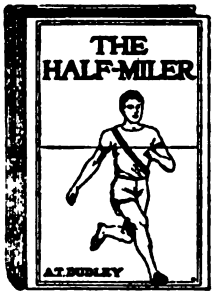
AT the close of his first year in college Dick Melvin is induced to earn a passage to Europe by helping on a cattle steamer. The work is not so bad, but Dick finds ample use for the vigor, self control, and quick wit in emergency which he has gained from football.

## THE PECKS IN CAMP

THE Pecks are twin brothers so resembling each other that it was almost impossible to tell them apart, a fact which the roguish lads made the most of in a typical summer camp for boys.

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# Stories of the Triangular League

## By A. T. DUDLEY

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## THE SCHOOL FOUR

THE events of the story centre in the Westcott School, one of three which have formed a new league. The leading forms of athletics, including rowing, figure in the gaining of points towards a championship cup, and the rivalry is most intense. At Westcott's, the crowning student honor is the Captaincy of the school four, and the way in which the succession to the coveted position falls to the one best deserving it forms the climax.

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## AT THE HOME PLATE

THE scene of this book is at a public school, "Newbury," which seeks to win a prize cup held by its rival, "Westcott's," the winner during the first year of the "Triangular League." This is hard to accomplish, and an important factor is a new student who had to overcome the handicap of being the brother of an unpopular teacher. There is good baseball in this book, but it is hardly more prominent than football and hockey.

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